Economic Intervention and Regulation in Canadian Agriculture

J. D. Forbes R. D. Hughes T. K. Warley

A study prepared for the
Economic Council of Canada, and
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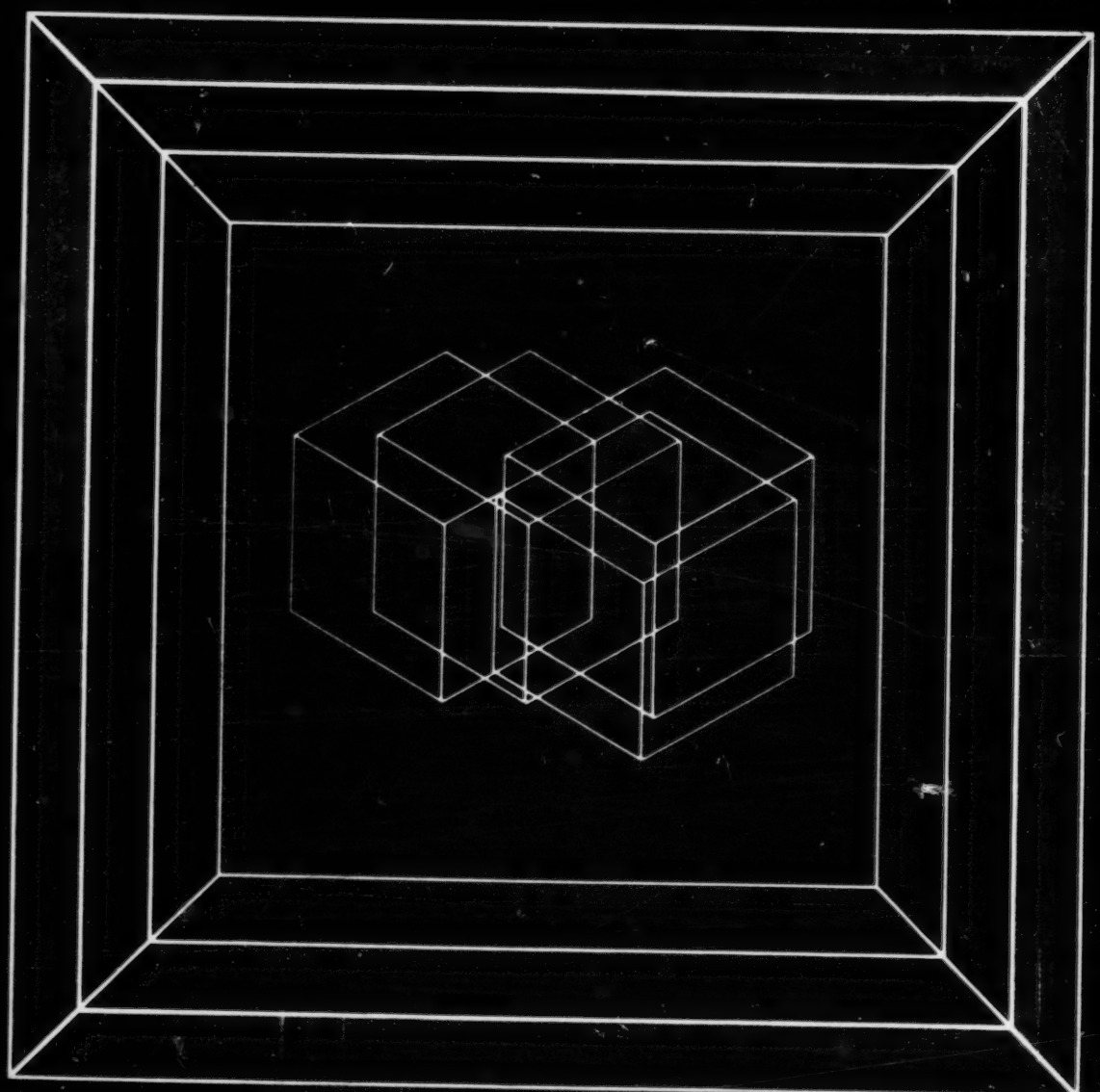

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and
The Institute for Research on Public Policy

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Authors' Note

This study is a product of the joint work of the three authors, and it presents consensual views.

The authors are listed in alphabetical order. All three contributed to all stages of the enquiry and to the writing of the report. However, each member of the team also had particular responsibilities.

J. D. Forbes was responsible for the initiation and conceptualization of the project. He made distinctive contributions in the areas of the policy formulation process, farm incomes, and formula pricing, supervised the preparation of some of the research monographs, and wrote the section on grains policy (Chapter 9). Beyond that, he participated in the writing of various drafts and the final version of this report.

D. R. Hughes was responsible for the overall management of the project, including supervision of the preparation of the research monographs commissioned from specialists, and he, with T. K. Warley, wrote the earlier drafts of the report.

T. K. Warley contributed most of the content of Chapters 1 to 5 and 11 to 14, and he wrote most of the final text.

Acknowledgments

Nine research papers were commissioned to provide background material to assist in the preparation of this study. Seven related to specific commodity areas, one to farm incomes issues, and one studied the food policy process. These research papers have been (or soon will be) jointly published by the Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy, and are listed below:

- Peter L. Arcus, "Broilers and Eggs," Technical Report E/I 3, 1981;
- Richard R. Barichello, "The Economics of Canadian Dairy Industry Regulation," Technical Report E/I 2, 1981;
- G. L. Brinkman, *Farm Incomes in Canada* (Ottawa: Supply and Services Canada, 1981);
- J. D. Forbes, "Institutions and Influence Groups in the Canadian Food Policy Process" (forthcoming);
- J. C. Gilson, "Evolution of the Hog Marketing System in Canada," Working Paper E/I 2, 1982.
- D. R. Harvey, "Government Intervention and Regulation in the Canadian Grains Industry," Technical Report E/I 6, 1981; this includes a supplementary essay by Fred Anderson, "Regulation and the Characteristics of the Supply of Transport to Agriculture in Canada;"
- Tim Josling, "Intervention and Regulation in Canadian Agriculture: A Comparison of Costs and Benefits Among Sectors," Technical Report E/I 4, 1981;
- Larry Martin, "Economic Intervention and Regulation in the Beef and Pork Sectors," Technical Report E/I 1, 1981; and
- D. M. Prescott, "The Role of Marketing Boards in the Processed Tomato and Asparagus Industries," Technical Report E/I 5, 1981.

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Finally, this study drew upon the work of a great many persons who have written upon various aspects of the subjects treated in this monograph. The literature upon which we have drawn was too large to cite fully in the text but we wish to acknowledge our indebtedness to our numerous intellectual creditors.

Introduction

While the growth of public expenditures and taxation by all levels of government has been the subject of considerable study and debate, it was only in the latter half of the 1970s that Canadians began to express concern about the growth, scope, and economic impact of government regulation. Responding to this concern, it was agreed at the meeting of First Ministers, in 1978, that the whole matter of economic regulation at all levels of government should be referred to the Economic Council of Canada for recommendations for action, in consultation with the provinces and the private sector. In mid-1978, the Economic Council of Canada established the Regulation Reference at the request of the Prime Minister. The present study represents the agricultural component of the Regulation Reference.

In 1979, a study of economic regulation in Canadian agriculture was commissioned by The Institute for Research on Public Policy. Subsequently, the intended scope of the research project was expanded and the Economic Council of Canada joined with The Institute to fund the study in its present form. A project advisory committee was established to provide guidance in the development of the study objectives and to give informed and constructive criticism of draft research material as it became available. The advisory committee members were drawn from groups with a stake in the food system, including representatives of federal and provincial governments, food industry trade associations, and farmer and consumer interest groups.

Government intervention in the food system is pervasive. Beyond the farm gate, governments are involved in regulation in such areas as food safety, plant and animal health, and grading, packaging, and labelling standards. These regulatory areas for selected food commodities have been addressed by the Council in an earlier series of Regulation Reference working papers.[1] Governments also promote the development of the farm and food system through their activities in the provision of research and extension services, factor supplies, infrastructure, and public goods, and through commercial policy and foreign market development. A third major component of government activity in agriculture is ensuring adequate farm incomes. The mandate of this enquiry required a specific focus on income transfer and income stabilization policies and, in particular, those that are associated with marketing boards.

The three major objectives of the study were:

- to investigate the economic impact of government regulation in agriculture, with particular reference to the role of marketing boards;
- to identify alternative policies and programs that could achieve the desired agricultural policy ends; and
- to recommend, where appropriate, changes to current regulatory policies and programs in agriculture that would better serve the interests of the Canadian food system and the nation overall.

Due to research budget constraints, the study does not investigate in any detail either the interregional impact or the vertical effects (that is, the effect of programs directed at the farm sector on the food processing, distribution, and retailing sectors) of current regulatory programs in agriculture.

The study has 14 chapters in three parts. Part I describes the background of agriculture and agriculture regulation in Canada. Chapter 1 provides an overview of the food system in Canada and its importance to the national economy. The place of marketing boards in Canadian agriculture is outlined. The rationale for government intervention in the agricultural sector is discussed, and the extent of direct expenditures by government on food related programs is delineated. A historical perspective on farm and food policy is presented in Chapter 2, where the food policy process and issues associated with policy evaluation are discussed. Farm incomes in Canada provide the topic for Chapter 3; a triad of issues – parity of returns in farming, income adequacy, and income instability – are addressed.

Chapter 4 discusses income transfer policies for Canadian agriculture. Some concerns about contemporary agricultural stabilization programs are raised in Chapter 5.

The general discussion of Canadian farm and food policy in Part I is only a skeleton, however. The commodity case studies presented in Part II put flesh on the bones by providing the detail necessary to evaluate the outcomes of specific economic interventions and regulatory activities in agriculture. The studies show the heterogeneity and complexities of Canada's commodity policies. Recommendations for regulatory reform must be correspondingly specific. However, together, the case studies provide the basis for the discussion of the broader food policy and marketing board issues that are addressed in the remaining chapters of Part III of the study.

Each of the five commodity or commodity groups studied was selected for specific reasons. Poultry (Chapter 6) because eggs and chickens are regulated by a federal statutory regulatory agency (SRA) and because cost of production pricing and supply restriction are the main regulatory tools. Dairy (Chapter 7) represents the lion's share of farm transfer payments, requires a high degree of co-operation between provincial and federal regulatory agencies, and illustrates the way in which government and board policies are interwoven. Processed fruits and vegetables, more precisely processed tomatoes and asparagus (Chapter 8), present two examples of the variety of boards involved, in that one, that for tomatoes, is a negotiating board, and the other sets, as opposed to negotiates, price. The grains sector (Chapter 9) was examined because it is the mainspring of Canadian agriculture, because the various regulatory agencies are of great historical and regulatory significance, and because of the effects on grains of Canadian transportation policy. And finally, red meats (Chapter 10) were chosen because of the large and widely distributed revenue their production generates, and because they represent the least regulated sector in Canadian agriculture. Taken as a whole, the commodities analysed in Part II encompass all major Canadian agricultural commodities and account for about 80 per cent of all agricultural output on a value basis.

Part III looks more directly at responsible regulation in the food industry. Chapter 11 focuses specifically on supply management as an instrument of agricultural policy, while Chapter 12 examines cost of production pricing – a technique used in conjunction with supply management programs. Ways in which the regulation of marketing boards might be improved are discussed in Chapter 13. Where appropriate, recommendations for reforming the economic regulation of Canadian agriculture are made in the above sections. Comprehensive conclusions reached by the study are presented in the final chapter, Chapter 14.

Part I

Policy and Problems in Canadian Agriculture

1 An Overview of the Food System in Canada

The food system in Canada consists of consumers of food and the business firms and organizations that are involved in the production, processing, wholesale and retail distribution, and importing and exporting of food products. The component industries are input suppliers, farming and fishing, food processing and manufacturing, wholesale distribution and food retailing, and hotel, restaurant and institutional catering. Other industries provide essential goods and service to the system such as packaging and processing supplies and equipment, and transportation, storage, and financial services.

There is no consistent, widely accepted single measure of the size of the Canadian food system. The major components of the food system, with associated gross sales emanating from each part in 1979, are shown in Figure 1-1. The magnitudes involved leave no doubt about the importance of the food system in the Canadian economy.

Consumer expenditure on food (including fish products and nonalcoholic beverages) was about $25 billion in 1979. This was 17.3 per cent of personal disposable income spent on consumer goods and services and, of this, 13.0 per cent was for food prepared at home and 4.3 per cent was for meals away from home. Food is second only to housing in the hierarchy of components in the Consumer Price Index (CPI), having a weight of 21.5 per cent. During the 1970s, the compound rate of increase in the food component of the CPI exceeded the compound rate of increase for the nonfood components of the CPI by over 40 per cent. This experience has done much to focus public and official interest on the food sector performance.

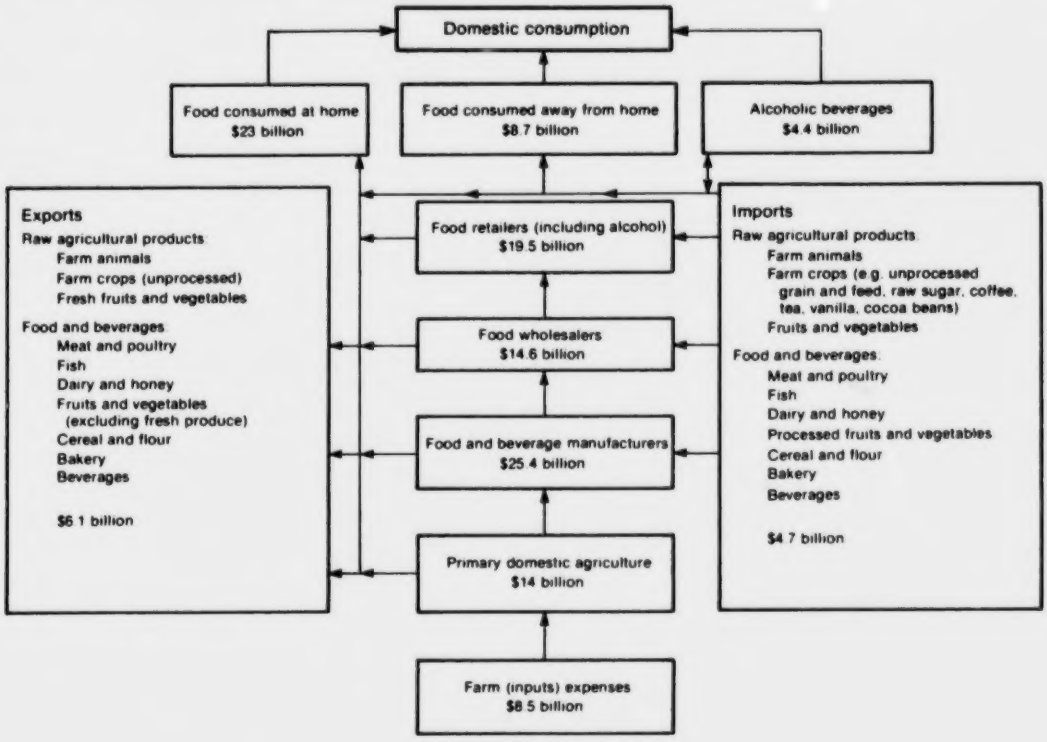
In terms of contribution to gross national product, the share of farming in 1977 was 4.8 per cent. Food and beverage processing and manufacturing, and wholesale and retail distribution added a further 6.4 per cent. This totals 11.2 per cent. Their corresponding shares in total national employment were 4.4 and 4.6 per cent for a total of 9.0 per cent. Add to these the value added and employment in fishing, the input supply industries, the hotel, restaurant, and institutional group, by the food-related activities of the firms and industries providing transportation, storage, financial services, packaging materials, processing equipment, and so on, and it is very likely that the system as a whole accounts for fully one-sixth of the total economic activity in Canada.

Despite constraints of climate and the availability of cultivable land, the production capacity of Canada's food system exceeds the needs of the domestic market. Accordingly, the food system is important to Canada's external accounts. Exports of farm and food products have consistently exceeded imports and have made an important contribution to the overall balance in the nation's external transactions and to maintaining the exchange rate of the Canadian dollar. In 1979, exports of $6.1 billion exceeded agricultural imports of $4.7 by $1.4 billion, which was over 90 per cent of the overall balance of the merchandise trade of Canada. Agricultural and food exports are equivalent to around 40 per cent of gross farm receipts. Hence, the maintenance and expansion of exports are vital to the future growth of Canadian farmers' incomes and the protection of their asset values. At the same time, about two-thirds of the 1979 food imports consisted of products that are also produced in Canada; as such there is obvious scope for growth through import substitution.

The major focus of this study is at the farm level of the food system, so additional comment on the farming component of the food system is appropriate.

Depending on definition, there are usually reckoned to be about 300,000 farm businesses in Canada, employing about 480,000 people. Farm numbers and employment in farming have recently appeared to be stabilizing. However, over the past 30 years, farming has been subject to substantial adjustment. The

Figure 1-1
The Food System, 1979



SOURCE This diagram is based on an unpublished paper, "The Food and Agriculture Sector. Industry Analysis Paper. Part 1. Sector Profile," prepared for the Food and Agriculture Sector Committee. National Development Conference. Ottawa. January 1980.

number of farms has fallen by half since 1951, and the farm population has dropped from 21 per cent of total population in 1951, to 4.4 per cent now. This understates the labour adjustment that has occurred inasmuch as there has also been a trend towards multiple job holding. Canada's "farmers" now earn more from off-farm income sources than they do from their farming operations. No other major industry has undergone such a radical and traumatic structural transformation in a single generation.

The shedding of labour and the growth in size of the residual farm businesses have been accomplished by the substitution of labour by capital. In 1979, farmers were using over $84 billion in capital invested in land and buildings, machinery and equipment, and livestock. Their equity was 82 per cent of this total. Investment per person employed in farming is approaching $175,000, which compares with about $40,000 in manufacturing (in 1976). Modern farming is a capital-intensive industry. At the same time, farming has become less self-sufficient. Expenditures on purchased inputs (such as fertilizers, machinery, fuel, chemicals, livestock, and feed) and interest payments exceeded $8 billion and absorbed some 60 per cent of gross farm cash receipts in 1979.

The output from Canadian farms and raw and semi-processed products from offshore sources provide the basic inputs for the food and beverage processing and manufacturing industry. With shipments at around $25 billion in 1979 (16.7 per cent of all manufacturing shipments), this industry is Canada's largest secondary industry. Meat packing is the largest subsector, with dairy processing following close behind; shipments from these two industries were valued at $7.4 billion and $4.0 billion, respectively, in 1979. In all, the food and beverage manu-

facturing sector has about 4,000 establishments employing over 200,000 people and these numbers are relatively stable. Unlike manufacturing as a whole, food processing and manufacturing is distributed across the country in proportion to population, and adding value to raw farm products is an important objective of the industrial strategies of the provinces as well as that of the federal government.

The foregoing gives the salient features of the importance of the food sector in the Canadian economy. Because of the considerable size of the food system, its performance has a significant influence on economic growth and employment for Canada as a whole and for its regions. Similarly, the prominence of agricultural trade in our external accounts and of food prices in the CPI means that the food industry performance is important to our balance of international payments and to price stability in the domestic economy. But interdependence flows both ways. Growth, price stability, and Canada's macro and foreign economic policies are important to the present performance and future prospects of the food system.

Marketing Boards and the Canadian Food System

A major goal of the present study is to investigate the economic impact of government regulation in agriculture, with particular reference to the impact of marketing boards on the performance of the national food system. The rationale for this stems from the emergence in the past two decades of marketing boards as a major tool of Canada's agricultural policy and a significant economic power in some areas of food production.

Marketing boards, which may be defined as statutorily sanctioned, compulsory, horizontal cartels of the producers of agricultural products, are used in a great many countries as instruments of public policy towards the agricultural industry.[1] They are employed in Canada to a unique degree. Currently, there are in Canada over 100 boards, covering over half of gross farm sales.

It should be noted first that "marketing boards" is a most ambiguous term that is used loosely to cover a variety of marketing institutions and arrangements. First, the statutory regulatory agencies that supervise commodity boards are called "boards" in some jurisdictions, in others commissions or councils. Second, some of the producer-controlled commodity cartels are themselves called "agencies" or "authorities" rather than "boards." Third, the Canadian Wheat Board and the Canadian Dairy Commission are monopoloid commodity marketing organizations, but they are federal crown corporations rather than producer-controlled. Finally, even in the paradigmatic circumstance of a producer-controlled marketing board operating at provincial level, the "board" is strictly the elected board of directors, which operates a marketing "plan" for a particular commodity under delegated authority. To add to the confusion, many boards do not actively use all the powers that are available to them under their marketing plans.

Boards can be ranked in a hierarchical order according to the marketing powers they deploy. In ascending order of market control these are:

- promotional and development boards (such as the Alberta Cattle Commission);
- single-selling-desk agency boards (such as the Ontario Hog Producers' Marketing Board and the British Columbia Fruit Board);
- negotiating boards (such as the Ontario Vegetable Growers' Marketing Board);
- price setting boards (such as the Ontario Asparagus Growers' Marketing Board); and
- supply management boards (such as the provincial boards for milk, eggs, poultry meats, and tobacco).

Even this is an over-simplification, but it is sufficient to caution against the inappropriateness of making generalizations about producers' marketing boards and to mandate a high degree of specificity in evaluating their programs and impacts. This need is reinforced by the fact that board programs interface with public agricultural commodity programs, and the two are often so intimately intertwined as to be, for all practical purposes, indistinguishable.[2]

Government interventions in marketing seem to be animated by three prime perceptions: that the performance of agricultural produce markets is far from perfect and that improvements wrought by government action can confer benefits on all market participants; that the primary producer's position in the market place is particularly weak, and farmers should have public support in their efforts to enlarge their share of the economic returns generated in the production-marketing system; and that targeted interventions in markets can be used to redistribute income systematically to farmers.

Government motivations are powerfully reinforced by farmers' perceptions of the marketing system for their products:

- many farmers and some major farm organizations do not have a notably positive attitude towards the marketing process wherein utilities of form, time,

place, and possession are added to the raw products they produce;

- despite a good deal of evidence to the contrary, many farmers remain convinced that the costs of providing marketing services are unnecessarily high and that the returns to marketing agents are excessive relative to the risks that are borne and the need to reward enterprise and innovation;[3]
- atomistically competitive producers face highly concentrated processing and distributive trades and believe that the resulting disparities in bargaining power translate into depressed farm prices and returns and inequitable terms and conditions of access to markets;
- farmers resent the erosion of their independence under contractual arrangements in vertically co-ordinated production marketing systems, and they fear that backward ownership integration will remove the production of some commodities from traditional agriculture;
- as farmers' shares of consumers' food expenditure fall, so that it now costs 50 per cent more to market food than to produce it, and as power in the market place shifts to stages and firms close to the consumer, their gathering apprehensions are reinforced, albeit that none of these developments is evidence of inefficiency or inequity in the food marketing system;[4] and
- insofar as farmers are preoccupied with the unit prices they receive for their products, they are painfully aware that prices are unpredictable, highly variable, often unsatisfactory, and formed and discovered to a decreasing degree in open markets.

Given those perceptions among policy makers and farmers, it is not to be wondered at that "marketing policy" is an active component of public policy towards agriculture and the food system.

The approach of governments has been broadly twofold. First, they have taken direct action in such areas as providing marketing facilities and auxiliary services, policing the marketing system (for example, grading and quality standards), developing markets domestically and internationally, and supporting and stabilizing producers' prices and incomes. Second, they have lent legislative and other support to farmers' "self-help" activities designed to improve their position by collective action.

The vehicles that farmers can use for this second purpose are voluntary association through marketing co-operatives and "compulsory co-operation" through marketing boards. Whichever organizational form is chosen, the ends producers seek are the same – namely, price and income enhancement, greater stability in unit prices and in the rates of return to farmer-provided resources, greater equity for farmers as a group and greater equity between individual farmers in their access to and treatment in markets, and a larger measure of control over their economic and personal destinies. These objectives have wide legitimacy in our society, and the century-long history of agricultural co-operation and the fifty-year history of the marketing board movement may be regarded as being the record of farmers' attempts to secure the same objectives that other groups have sought through, for instance, labour unions and trade and professional associations.

The avenues that are open to producers to increase their returns from the market through their marketing organizations may be schematized as follows:

I Increase consumer expenditures by:
  a) expanding consumer demand,
  b) increasing returns from given demands by:
    i) restricting supply or setting price,
    ii) segmenting submarkets,
    iii) controlling the spatial and temporal distribution of product.

II Reduce marketing charges by:
  a) reducing the costs of marketing,
  b) lowering the need and opportunity for profits of private marketing firms.

There are crucial differences between a voluntary marketing co-operative and a compulsory marketing board; a marketing board can do everything that a voluntary co-operative can do, and do it better; and, by reason of its mandatory character, a board can exercise marketing powers of great potency that are simply beyond the reach of a co-operative, namely, practice long-run supply restriction and neutralize short-run surpluses, set wholesale prices or collectively negotiate a price for the whole supply, discriminate between markets, and engage in revenue-enhancing aspects of controlled distribution. In short, a co-operative can only operate *in* a market and improve its functioning whereas a cartel can operate both *in* and *on* the market for its members' products.

As has often been demonstrated, the ability of voluntary marketing co-operatives to generate significantly improved returns for farmers is limited by the "free rider" problem, that is, nonmembers and recusants erode the benefits that accrue to members. But, more importantly, it is constrained by the fact that there simply are no large excess costs and profits to be squeezed out of the processing, distributive, and retailing subsectors. And, even if there were, the low price elasticities of demand and higher elasticities of supply that characterize food markets

would ensure that most of the benefits of any reductions in margins would accrue to consumers in the form of lower prices and expenditures rather than to farmers in higher gross and net returns.

One need not look beyond farmers' anxieties about their deteriorating position in farm product markets, the legitimacy of their objectives, the weaknesses inherent in voluntary associations, and the potency of the marketing board as an instrument for countervailing the economic power of others and for exercising original market power in order to understand why they have striven for half a century for the right to create marketing institutions that would provide them with real "muscle" in the market place.

Table 1-1 indicates the pervasive influence of boards in the Canadian food system (in terms of numbers, producers, cash receipts, and regional presence). Numerically, most of the boards are producer-controlled and have jurisdiction only within a province. The Canadian Dairy Commission and the Canadian Wheat Board are Crown corporations or federal government boards. The national agencies for eggs, broilers, and turkeys lie between these polar institutional types; they operate under joint federal-provincial agreements, and co-ordinate the activities of the provincial boards for their respective commodities. It may be noted here that marketing boards with supply management powers and production or marketing quotas are confined to milk, poultry meat, eggs, and tobacco. These accounted for close to half the boards and approximately 25 per cent of total farm cash receipts in Canada in 1978-79. Marketing boards are an important tool of agricultural policy but, as we see below, that policy is framed in a much wider context.

Table 1-1

Selected Marketing Board Statistics, Canada by Province, 1978-79

	Products	Number of boards[1]	Number of producers[2]	Percentage of farm cash receipts[3]
Newfoundland	Eggs	1	38	54
Prince Edward Island	Tobacco, potatoes, hogs, dairy, eggs	5	1,522	45
Nova Scotia	Wheat, tobacco, dairy, hogs, broilers, turkeys, eggs, wool	8	2,056	61
New Brunswick	Dairy, hogs, broilers, turkeys, eggs, apples, wood	11	4,686	52
Quebec	Tobacco, maple products, wood, dairy, broilers, turkeys, eggs	23	51,180	57
Ontario	Winter wheat, seed corn, soybeans, dairy, hogs, broilers, turkeys, eggs, fruits and vegetables, beans, tobacco	22	80,840	56
Manitoba	Grains, dairy, hogs, sheep and wool, broilers, turkeys, eggs, vegetables	8	9,431	49
Saskatchewan	Grains, dairy, hogs, sheep and wool, broilers, turkeys, eggs, vegetables	7	12,037	64
Alberta	Grains, dairy, hogs, sheep, broilers, turkeys, eggs, cattle, potatoes and other vegetables	7	25,725	38
British Columbia	Grains, milk, eggs, broilers, turkeys, fruits, potatoes and other vegetables	10	4,575	57
Canadian Wheat Board	Wheat, oats, and barley	1	153,747	
Canada		103	345,837	54

1 Excluding educational/promotional and inactive boards, as well as the national agencies for the milk and poultry industries.
2 Excluding producers covered by the Canadian Wheat Board; however, some double counting remains because some producers are served by more than one board.
3 Receipts from the Canadian Wheat Board and the Canadian Dairy Commission are allocated among provinces.
SOURCE Agriculture Canada, "Marketing Board Statistics, Canada, 1978-79," Ottawa, 1980.

Public Policy and the Food System

In recent years, public policy has increasingly broadened its reach to encompass the whole food system, and has become more directed at the general objective of emphasizing food system development within the context of national industrial strategy so as to ensure that food and agricultural policy objectives and performance support the broader goals for the Canadian economy, society, and polity.

It was not always so. Until quite recently, the predominant concern of departments of Agriculture was with the farming component of the food system and this was reflected in the benefits that accrued to farmers via federal and provincial agricultural programs. This is understandable. The scientific industrialization of agriculture, the diminished distinctiveness of farming as an industry and as a way of life, and the "urbanization" of Canada, all placed farmers and rural communities under tremendous stress, and necessitated continuous adjustment. Labour has been shed at an astonishing pace and farms have become fewer, larger, and more specialized, more dependent on capital and purchased inputs, and more integrated with the food marketing industries and foreign markets.

Faced with this situation, an important thrust of farm policy has been directed towards attenuating the economic and social hardships of such adjustments by protecting agriculture and transferring income to farmers. Income transfer policies have been intimately interwoven with the wider issues of rural poverty, rural depopulation, and regional income disparities. These income transfers have been affected directly through the taxation-expenditure system, and indirectly through market control programs. The latter include frontier protection against competitive imports and the various production control and price-setting arrangements operated within the Canadian market by some marketing boards.

Simultaneously, federal and provincial governments have been deeply involved in promoting the development of the farm sector through their activities in such areas as research and extension, facilitating and subsidizing factor supply, the provision of infrastructure and public goods, and through commercial policy and foreign market development.

The third broad area of government involvement is in establishing and policing regulations pertaining to such matters as food safety, plant and animal health, grading, packaging, labelling standards, and preserving competitive behaviour beyond the farm gate.

In agricultural policy discussions, it has been customary to use the generic term "intervention" to encapsule the role of government in the food system and to discuss such interventions in terms of their intent (income support and stabilization, market development, and so on), without reference to a generalized conceptual framework. However, it is not difficult to fit agricultural policy analysis into the wider framework and the terms used by "regulation analysts" to classify and justify the reasons for substituting government decisions for the workings of the market place. This accommodation is sketched below. It is particularly relevant to the first of the three thrusts of farm and food policy identified above – farm income support and stabilization – which is the focus of this study.

Governments would claim that while the competitive market model has great appeal in terms of both efficiency in resource use and its contribution to individual freedom, there are numerous instances in which intervention and regulation are needed to rectify deficiencies in the functioning of farm and food markets.

Destructive Competition — An atomistically competitive structure in farming, an inelastic demand with respect to both price and income, a constant flow of publicly provided technological advances that are output increasing, and a high proportion of costs that are fixed and associated with human and capital production factors that are specialized as to use and location all combine to force the rates of return to resources in farming to relatively low levels. Additionally, the rate of return to resources provided by the farmer is chronically unstable due to the inability of an atomistically competitive industry to control the amount marketed in the face of supply and demand variation and the propensity for producers in aggregate to overreact (sporadically or cyclically) to market disturbances. Public policy is therefore designed to redistribute to farmers a part of the fruits of their rising productivity (which otherwise accrues mainly to consumers in the form of lower food prices and expenditures), to slow the rate of reduction of the numbers of farmers and farms that can be supported in a progressive society, and to lessen the economic wastes attributable to endemic instability in the food system.

Structural Imperfections — There are great differences in the degrees of concentration in various parts of the system. Intervention/regulation is deemed necessary to enforce competitive behaviour in the

concentrated sectors and, more particularly, to correct disparities in bargaining power between the oligopoloid input supply and the processing, distribution, and retailing (PDR) segments of the food system and atomistically competitive farmers.

Inadequate Information — The production of information is characterized by economies of size, its acquisition is beyond the means of individual small-scale firms, and it is undervalued if its benefits cannot be retained by individual farmers. Consequently, too little information is produced in private markets, resulting in poor decisions and wasted resources. This justifies the production and dissemination of information from public sources, particularly on agricultural production technology and market information.

Externalities — Markets do not place a monetary value on all the benefits produced by private activity. For example, transfer payments to agriculture may be warranted because of the value placed by society – but not by the market place – on an aesthetically pleasing rural landscape, and it is argued that farmers should be compensated for their stewardship of the land.[5]

Intervention in, or economic regulation of, the farm and food system is also motivated by other public policy objectives that are primarily noneconomic in character (although they all have economic dimensions). Three of these that seem particularly influential in the Canadian context are identified below.

Income Distribution — Perhaps the most powerful single factor that animates agricultural policies in all developed countries is the perception that returns to resources in agriculture are chronically depressed, and that those farm firms that command limited quantities of human and capital resources generate incomes for the farm families that operate them that are below socially acceptable levels. In this sense, farm policy is a component of the wider commitment of government to bring about a more equitable distribution of income within Canadian society. Income is systematically redistributed to farming as an industry through a great variety of direct expenditures and indirect transfer mechanisms, and some regard is paid to intra-industry income distribution insofar as some programs and program benefits are targeted on the smaller farm businesses and the poorest farm families, at least in principle. Additionally, farm policy has elements that are designed to prevent the erosion of the economic viability of rural communities and remote "have not" areas and to promote balanced regional economic development.

Agricultural Fundamentalism — It seems to be widely believed that farmers as a class have a disproportionate share of social virtues, that farming as an occupation produces superior citizens and strong families as well as products, and that rural communities provide a better social and cultural environment than urban living. In the same vein, the family farm is valued as the core economic unit of agriculture for providing a happy combination of family, home, and business, and a unique expression of self-reliance, the work ethic, the dispersal of economic power and progress through industry, and efficiency.[6] Such notions, whose reality is difficult to measure, nonetheless animate public policies that are designed to provide economic benefits to a group deemed particularly worthy of support, to slow the rate of out-migration from agriculture, to preserve the viability of rural communities, to impede the concentration and industrialization of agricultural production, and to control the extent and the form of farming's integration into other parts of the food system.

Self-Sufficiency — In any economy, goods are perceived as having different degrees of importance that may bear little relationship to their relative market prices. Food is a necessity and all societies try to organize a secure food supply. The high degree of national self-sufficiency in food that is observed the world over has less to do with the distribution of resource endowments than with the conscious pursuit of policies that are designed to foster a higher degree of food supply autarky than market forces would bring about.[7] A secure food supply is a first priority of national policy on strategic grounds, and "secure" usually translates into "home produced." Recently, this basic impulse to avoid the vulnerabilities of overdependence on foreign supplies has been reinforced by a wish to avoid importing economic instabilities from world food markets. There seems to be a willingness by governments to have consumers pay a somewhat higher but steady price for a secure indigenously produced food supply, rather than pay a lower average but more variable price for foreign supplies that are less certain in their availability.

Federal Government Programs and Expenditures in the Food System

Government commitment to and intervention in the food system over recent years can be traced by data presented in Table 1-2, in which the net direct expenditures by the federal government for specific food policies and programs in 1965/66 and between the fiscal years 1970/71 and 1978/79 are presented. These expenditures are primarily by Agriculture Canada, although other federal departments such as Industry, Trade and Commerce, Transport, External

Table 1-2

Net Expenditures by Federal Government for Specific Policies and Programs, Canada, 1965/66 and 1970/71 to 1978/79[1]

	1965/66	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79
					(Thousands of dollars)					
Type of expenditure (and department)										
Direct payments through commodity programs:										
- Direct subsidy on milk (Ag.)	19,210	125,000	109,000	107,400	143,400	251,100	275,000	233,118	293,580	271,524
- Deficiency payments (Ag.)	39,407	1,470	12,988	11,184	97	46,474	25,989	28,749	70,531	47,069
- Price support – Agricultural Products Board (Ag.)	1,619	398	520	419	5	98	415	1,122	35	107
- Quality premium on hog and lamb carcasses (Ag.)	8,650	1,379	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
- Premium on high-quality cheese (Ag.)	1,505	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
- Subsidies on fluid milk and powder (Ag.)	n/a	n/a	n/a	n/a	51,474	74,621	14,453	13,080	12,952	563
- Lower Inventory for Tomorrow (Ag.)	n/a	57,588	5,678	n/a	n/a	n/a	n/a	n/a	n/a	n/a
- Grassland Incentive Payments (Ag.)	n/a	n/a	9,807	15,619	16,770	14,944	n/a	n/a	n/a	n/a
- Two-price wheat (IT&C)	n/a	n/a	n/a	63,173	69,386	81,230	188,698	65,303	21,860	43,826
- Western Grain Stabilization Program (IT&C)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	61,801	57,980	53,157
- Payments to wheat producers to increase minimum return (IT&C)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	4,500	405
- Compensation for losses due to Migratory Waterfowl (Ag.)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1,500
- Write-off of CDC Milk Powder Export Subsidy Deficit (Ag.)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	159,718	n/a
Subtotal	70,391	185,835	137,993	197,795	281,132	468,467	504,555	403,173	621,156	418,151
Direct payments through social programs:										
- Canada West Foundation (IRC)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	75
- Exhibition contributions (Ag.)	919	1,342	1,359	1,378	1,405	1,411	1,470	1,596	1,651	2,021
- Agricultural Museum contributions (Ag.)	6	21	24	24	24	24	30	31	31	31
- Federated Women's Institutes of Canada (Ag.)	10	10	10	10	10	10	10	10	10	10
- 4-H Club assistance (Ag.)	160	191	193	198	208	196	208	212	216	221
+ Small Farm Development adjustment (Ag.)	n/a	n/a	n/a	638	6,102	8,653	7,318	6,548	2,628	n/a
- Farm Labour Pool (E&I)	n/a	n/a	n/a	n/a	n/a	1,489	3,462	3,438	3,879	3,811
- Agriculture for Young Canadians (E&I)	n/a	n/a	n/a	n/a	n/a	50	n/a	n/a	n/a	n/a
- Student summer employment and activities (Ag.)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	682	908
Subtotal	1,095	1,564	1,586	2,248	7,749	11,833	12,498	11,835	9,097	7,077
Crop insurance:										
- Contributions to provinces – Crop Insurance Act (Ag.)	631	2,898	3,158	4,144	15,182	31,140	48,276	56,457	72,812	74,965
- Contribution to province of Quebec (Ag.)	n/a	920	877	1,070	1,473	96	n/a	n/a	n/a	n/a
Subtotal	631	3,818	4,035	5,214	16,655	31,236	48,276	56,457	72,812	74,965
Assistance in producer financing:										
+ Farm Credit Corporation net loss (Ag.)	1,105	8,603	8,885	8,446	6,808	4,716	3,514	2,400	1,700	–1,700
- Grants to provinces in accordance with terms and conditions prescribed by Minister of Agriculture (Ag.)	9,751	n/a	n/a	12,250	2,021	795	1,404	2,599	354	772
- Pesticide Residue Compensation (Ag.)	180	n/a	n/a	n/a	n/a	13	1	n/a	n/a	n/a
- Cheese Improvement Act (Ag.)	207	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
- Prairie Grain Provisional Payments (IT&C)	n/a	63	21	10	8	42	n/a	n/a	n/a	n/a
- Prairie Grain Advance Payments (IT&C)	669	11,614	3,513	1,036	1,645	3,058	1,011	2,550	3,478	5,193
- Deficit Pool Accounts (IT&C)	n/a	18,295	11,210	3,870	n/a	n/a	n/a	n/a	n/a	n/a

Table 1-2 (cont'd)

	1965/66	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79
	(Thousands of dollars)									
- Deletion from the accounts of advances made to Saskatchewan to provide seed grain loans to farmers (Fin.)	n/a	n/a	n/a	n/a	n/a	74	n/a	n/a	n/a	n/a
Subtotal	11,912	38,575	23,629	25,612	10,482	8,698	5,930	7,549	5,532	4,265
Storage and/or freight assistance:										
+ Canadian Livestock Feed Board (Ag.)	n/a	20,773	20,563	21,381	22,737	21,921	20,709	12,730	11,773	14,155
- Freight or livestock shipment to Royal Winter Fair (Ag.)	38	46	63	61	40	28	65	114	64	99
+ Canadian Government elevator operations (Ag.)	1,684	2,478	3,132	3,671	4,050	6,357	8,126	7,968	9,435	606
- Contributions towards the cost of transportation of fodder and silage (Ag.)	278	n/a	n/a	580	820	944	n/a	n/a	n/a	402
- Contributions to producer groups towards the cost of construction of storage (Ag.)	50	n/a	n/a	n/a	367	1,218	1,292	893	1,645	1,808
- Payments on temporary wheat reserves (IT&C)	36,807	23,650	85,281	21,919	5,833	n/a	n/a	n/a	n/a	n/a
- Payments to Canadian Wheat Board for the purchase of hopper cars to facilitate the movement of Canadian grain exports (IT&C)	n/a	n/a	n/a	46,091	n/a	n/a	40,639	167,341	2,343	838
- Contribution to CN and CP re-leasing railway cars (IT&C)	n/a	n/a	n/a	1,300	n/a	3,430	n/a	n/a	n/a	n/a
- Contribution to Canadian Wheat Board to cover carrying charges on reserve stocks of feed grains (IT&C)	n/a	n/a	n/a	n/a	n/a	1,849	3,215	2,743	2,994	2,200
- Contribution to Railways under Section 258 of Railway Act (T.)	n/a	n/a	33,282	22,884[1]	25,248[1]	85,505[1]	108,685[1]	104,419	67,022	98,854
- Maritime Freight Rates Act (T.)	n/a	13,999	13,111	13,000	14,088	15,060	16,020	17,103	15,986	15,379
- Atlantic Region Freight Assistance Act (T.)	n/a	2,822	6,937	11,422	15,972	21,748	23,692	27,070	29,907	41,283
- Assistance to Rapeseed Processing Freight (IT&C)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	500	2,500	3,839
- Feed Freight Assistance Adjustment Fund (Ag.)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	4,996	11,749
- Canadian Co-operative Implements Ltd. (Ag.)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8,000	n/a
- Assistance to UCO Grain Terminal (Ag.)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	500	8,000	n/a
- Rehabilitation of Box-cars (IT&C)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2,911
- Rehabilitation of Prairie Branch Railway Lines (T.)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	30,000	70,000
Subtotal	38,857	63,768	162,369	142,309	89,155	158,000	222,443	341,348	194,665	264,123
Research programs:										
+ Animal Contagious Diseases (Ag.)	14,995	7,725	9,483	10,902	12,750	17,247	23,554	27,580	27,747	24,770
+ Animal Pathology Programs (Ag.)		3,628	4,027	4,435	5,409	6,417	10,275	9,045	9,916	11,967
+ Research activities (Ag.)	32,593	47,753	50,726	54,310	62,959	74,335	95,633	95,744	104,380	113,872
- Livestock improvement (Ag.)	10	22	21	16	33	33	50	91	121	113
- New Crop Development Fund (Ag.)	n/a	n/a	n/a	n/a	n/a	100	521	759	913	737
- CDC Research (Ag.)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	577	817
Subtotal	47,598	59,128	64,257	69,663	81,151	98,132	130,033	133,219	143,654	152,276
Extension and information services:										
+ Economics and CANFARM (Ag.)	979	3,940	6,706	7,080	7,819	8,850	9,833	10,499	13,118	6,481
+ Information (Ag.)	685	1,472	1,952	2,299	2,202	2,679	2,765	3,263	3,422	4,105
+ Elevator and Grain Documentation (Ag.)	n/a	708	905	1,029	1,117	1,303	1,407	1,604	1,722	1,850
- Canadian National Livestock Records (Ag.)	45	50	50	50	65	50	50	50	50	50
Subtotal	1,709	6,170	9,613	10,458	11,203	12,882	14,055	15,416	18,312	12,486
Testing services:										
+ Agricultural pest and disease control (Ag.)	n/a	1,731	1,892	2,182	2,324	2,645	2,813	3,163	3,807	n/a
+ Meat inspection (Ag.)	n/a	12,697	14,583	16,591	17,965	21,625	24,805	29,779	32,507	35,742

Table 1-2 (concl'd)

	1965/66	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79
					(Thousands of dollars)					
+ Grain inspection (Ag.)	5,260[2]	4,024	4,861	5,824	5,921	6,601	7,886	8,190	8,213	9,137
+ Grain testing and research (Ag.)	n/a	928	1,090	1,336	1,682	1,997	2,058	2,224	2,743	2,747
+ Grain weighing (Ag.)	n/a	2,147	2,581	2,702	2,541	2,724	3,539	3,635	3,727	5,065
Subtotal	5,260	21,527	25,007	28,635	30,433	35,592	41,101	46,991	50,997	52,691
Technical and food aid:										
- World Food Program (Ext. Aff.)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10,000	10,000
- International Food Aid Program (Ext. Aff.)	34,539	100,141	75,529	94,272	66,274	106,991	222,537	237,511	221,519	175,916
- FAO (Ext. Aff.)	979	1,226	1,538	1,528	2,142	2,141	3,324	3,373	4,331	4,630
- Mennonite Central Committee Food Bank (Ext. Aff.)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	500	1,000
Subtotal	35,518	101,367	78,067	95,800	68,416	109,122	225,861	240,884	236,350	191,546
Trade promotion:										
+ Marketing and promotion (Ag.)	2,360	7,579	8,725	10,065	11,441	13,482	16,364[1]	18,378	20,659	21,605
- Rapeseed utilization assistance (IT&C)	n/a	200	200	300	300	300	300	325	325	350
- Grains export credit (IT&C)	n/a	1,599	2,291	2,106	5,946	11,904	10,070	7,743	7,218	12,399
- Grains and oilseeds marketing incentives (IT&C)	n/a	n/a	n/a	726	318	412	390	635	979	840
- Contribution to the Canadian International Grains Institute (IT&C)	n/a	n/a	n/a	n/a	564	355	443	529	619	686
- Payments to western millers re stop off charges (IT&C)	n/a	n/a	n/a	n/a	139	133	200	725	850	983
+ Marketing (IT&C)	n/a	n/a	n/a	1,117	1,418	1,569	3,343	5,799	3,780	2,747
- Milk promotion by CDC (Ag.)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	500	2,379	3,800
Subtotal	2,360	9,378	11,216	14,314	20,126	28,155	31,110	34,634	36,809	43,410
Social adjustment and rural economic development										
- ARDA (DREE)	28,383[2]	18,088	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
- Rural Area Development (DREE)	n/a	35,012	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
- Canada Land Inventory (DREE)	n/a	4,016	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
+ Social Adjustment and Rural Economic Development (DREE)	n/a	n/a	88,223	101,551	109,863	123,861	117,342	99,696	74,390	66,089
+ Lands Inventory (EC)	n/a	n/a	n/a	4,445	n/a	n/a	n/a	n/a	n/a	n/a
Subtotal	28,383	57,116	88,223	105,996	109,863	123,861	117,342	99,696	74,390	66,089
Administration and miscellaneous[3]										
+ Administration (Ag.)	15,476	16,612	17,181	20,518	29,836	38,500	41,461	50,196	52,601	81,231
+ Miscellaneous (Ag.)	68	7	6	8	25	39	33	88	125	163
+ Canadian Dairy Commission (Ag.)	n/a	453	535	656	752	895	1,062	1,348	1,666	1,980
Subtotal	15,544	17,072	17,722	21,182	30,613	39,434	42,556	51,632	54,392	83,374
Grand total	259,258	565,318	623,717	718,253	785,377	1,171,826	1,346,419	1,442,834	1,518,166	1,370,378

- Grants, contributions, or transfer payments only.
+ Including operating capital and grants.
n/a Not applicable or not available.
1 Revised.
2 Fiscal year April 1-March 31.
3 Administration expenditures in Agriculture Canada only, including contributions to superannuation accounts, operating and capital expenditures less revenue and receipts credited to vote. Miscellaneous includes membership fees and contributions to international and domestic organizations, and so on.

SOURCE G.L. Brinkman, *Farm Incomes in Canada*, Economic Council of Canada and The Institute for Research on Public Policy (Ottawa: Supply and Services Canada, 1981), Table 6-1, p. 51.

Affairs, Regional and Economic Expansion, Finance, and Employment and Immigration expend funds of lesser magnitude on this sector.

Overall, federal expenditures in the fiscal year 1978/79 were $1,370 million. Total federal expenditures increased rapidly in nominal terms from $570 million in 1970/71 to $1,520 million in 1977/78 before declining to $1,370 million in 1978/79. In real terms, the annual rate of increase between 1970/71 and 1978/79 was 3.2 per cent (Table 1-3). In the first half of the decade, the annual rate of real increase was close to 10 per cent, but there was a change in trend at mid-decade and between 1975/76 and

1978/79 there was an annual rate of decrease of 6.5 per cent.

Table 1-3

Net Direct Total Expenditures by the Federal Government for Food-Related Policies and Programs, 1970/71 to 1978/79

	Direct total expenditures	Compound annual rate of increase	
	(Millions of 1971 dollars)[1]	(Per cent)	
1970/71	583,404		
1971/72	623,717		
1972/73	684,050	9.5	
1973/74	685,320		
1974/75	887,075		3.2
1975/76	920,314		
1976/77	900,645	-6.5	
1977/78	885,744		
1978/79	751,716		

1 Deflated by the implicit price index of the gross national expenditure (1971/72 = 100).
SOURCE Table 1-2.

Although comparable figures were not available for this study, it is known that expenditures by provincial governments on farm and food programs also grew during the 1970s. Additionally, it should be stressed that the figures in Table 1-2 detail only the direct expenditures by the federal government on food-related policies and programs. They take no account of the large and growing indirect income transfers to farmers that are affected by the market regulating activities that are the subject of this report, nor of the very substantial benefits that accrue to farmers through preferential taxation treatment.

The program areas and expenditures identified in Table 1-2 illustrate the diversity and extent of government involvement in the food system. It will be apparent that not all "agriculture" expenditures are designed solely to help farmers. Programs of commodity grading, health inspection, and the like provide benefits that also accrue to consumers and business buyers in terms of lower prices and more assured and safer food supplies. However, direct federal and provincial government payments on commodity programs and input and marketing subsidies averaged 24 per cent of the aggregate realized net income of Canadian farmers in the 1970-78 period.[8]

Furthermore, these direct payments through commodity programs and storage and/or freight assistance programs accounted for half of the direct expenditures by the federal government in the major agricultural program areas in the fiscal year 1978/79 (Table 1-4). Technical and food aid programs directed at the developing countries and domestic research programs together represented a further one-quarter of net direct expenditures. All other program and policy areas combined accounted for less than one-quarter of net direct expenditures in that fiscal year.

Table 1-4

Net Direct Expenditures by the Federal Government on Major Agricultural Policies and Program Areas Ranked by Level of Expenditure, Fiscal Year 1978/79

	Millions of dollars	Percentage of total
Policy/program area		
Direct payment through commodity programs	418.2	30.5
Storage and freight assistance	264.1	19.3
Technical and food aid	191.5	14.0
Research	152.3	11.1
Administration and miscellaneous	83.4	6.1
Crop insurance	75.0	5.5
Social adjustment and rural economic development	66.1	4.8
Testing services	52.7	3.8
Trade promotion	43.4	3.2
Extension and information services	12.5	0.9
Direct payment through social programs	7.0	0.5
Assistance in producer financing	4.3	0.3
Total	1,370.5	100

SOURCE Table 1-2.

In summary, the Canadian food system is complexly intertwined with every aspect of the national economy and polity. Marketing boards are involved in the first-stage marketing of over one-half of all farm output. Government commitment to helping farmers through a period of structural change and market uncertainty, and to providing Canadians with a secure and safe food supply, is evidenced by annual net direct federal expenditures on the food system (mainly on the agricultural component) of well over $1 billion a year. Expenditures by provincial governments and large and growing indirect transfers to farmers increase the total even further. One of the major aims of this study is to evaluate the effectiveness and the consequences of selected aspects of this economic intervention and regulation in Canadian agriculture. The next chapter sets the stage for that analysis by describing farm and food policy in Canada.

2 Farm and Food Policy in Canada

Government involvement in Canadian agriculture has a long history. In pre-Confederation times, agricultural development was fostered to provide a secure and indigenous food supply. In the Nineteenth century, agricultural development became inextricably interwoven with immigration, land settlement, and transport policies, and grain exports were promoted as an important source of commerce and national prosperity. Beginning in this period also, public policies were introduced that were directed at resource development, the promotion of production and marketing efficiency, the improvement of the quality and the grading of farm products, and the control and prevention of animal and plant diseases. Such programs continued as the main thrust of agricultural policy in the early part of this century and have remained as large components of the activities of departments of Agriculture to this day.

It was not until the depressions and drought of the 1920s and 1930s that income maintenance for farmers became a theme of agrarian policy. The effect of the depression on Canada was so severe that little could be done for agriculture by direct expenditures on price and income support and stabilization programs. Instead, this objective was pursued by promoting collective marketing by farmers of their products through voluntary cooperatives and compulsory marketing boards, and by the various relief and rehabilitation programs that were introduced for Prairie agriculture.

Extensive price and production controls and direct income and input subsidies were a feature of the World War II period but, thereafter, the emphasis switched back to promoting production and marketing efficiency, maintaining health and quality standards, developing markets, providing credit, and assisting farmers to better their position in the market place through the "self-help" programs implemented by their marketing organizations. Price and income stabilization and support programs were modest, as befit a country that perceived its agricultural industry as having a good farm structure and advanced technology and being geared to competitive export markets.

Unusual market instability and persistent excess capacity in Canadian agriculture in the 1950s and 1960s forced governments to make a more extensive commitment to farm price and farm income support and to become more deeply involved in agricultural market management. Beginning with the Agricultural Stabilization Act of 1958, and with gathering momentum through the 1970s as input prices soared and product markets became more turbulent, the last two decades have seen a progressive escalation of government intervention and regulation of agriculture, with emphasis on income transfer and stabilization programs. This has been manifested particularly in the growth in the number of provincial and national marketing boards and extensions of their control powers, the widening adoption of formula pricing techniques, the expansion of public stabilization programs, and the extension of trade controls at Canada's borders on agricultural and food imports.

The trend towards greater government involvement in agriculture has not gone unchallenged. The Federal Task Force on Agriculture,[1] which was set up in a period of agricultural distress, in 1969 called for an active agrarian policy to be guided by the long-run objective of creating a market-oriented, self-sustaining farm and food industry that would be economically viable at internationally competitive prices. The role of government was seen as being to maintain a desirable economic and social environment, to promote production and marketing efficiency and development, to facilitate and ameliorate structural adaptation, and to provide socially useful services that are beyond the reach of small, individual farm businesses. Stabilization programs were endorsed, but sustained income transfers were not. A public utility approach to agriculture and food and the idea that the sector should be overtly and continuously "managed" were explicitly rejected.

Prior to the 1970s, the principal concern of public policy towards agriculture seemed to be with the well-being of farmers and rural communities. Policy was

formulated largely within "the iron triangle" of farm organizations and federal and provincial ministers of Agriculture, who were perceived as partisan advocates of farmers' interests (as ministers *for* agriculture). There was little interest in matters pertaining to food and agriculture outside the agricultural establishment.

Change came from two directions during the 1970s. First, the onset of food price-led inflation in 1972-73 sparked consumers' concerns about the performance of the food sector and the influence of public policies on food prices. This, together with growing anxiety throughout the decade about food quality and safety, nutrition and health, environmental degradation, resource conservation, and world hunger and food insecurity led to the demand that there should be "a comprehensive national food policy" within which farm policy would be a coherent and supportive part.[2] Second, agriculture and food became caught up in the reappraisal that was initiated during the decade about the role of government in the Canadian economy and, more particularly, about the efficacy and the long-term effects of rising levels of public spending and the growth of the government's regulatory activities. For, in the course of the debate on a national food policy, a wider audience became aware that expenditures on agriculture and economic regulation of food production and marketing were extensive and rising. Hence the situation in the past decade, where public policies for food and farming were subject to intense scrutiny, was that governments had to explain their policy objectives for the food sector to a national constituency and were asked to account for and justify their expenditures and their regulatory interventions.

It may be observed at this point that after almost a decade of public debate on "food policy" there are few indications that federal or provincial governments wish or intend to reduce the extent of their overall involvement in the sector in the future. On the contrary, public pronouncements by some ministers of Agriculture point to a desire on their part to expand regulation in some commodity subsectors (for example, beef, pork, and potatoes) and to extend the reach of policy in other areas (for example, stabilization, land use and ownership, and market development). Among the participants in the food system, only the PDR sector and consumers are identified with calls for less regulation and greater scope for market forces, and then only selectively. The policy statements of general farm organizations and commodity associations leave no doubt that Canadian farmers generally are striving to preserve the existing public interventions in their industry and demanding additional benefits from present and new programs. That is, they are seeking more government involvement and more economic regulation rather than less.

Factors Influencing Farm and Food Policies

Farm and food policies emerge from a complex interaction of societal values, beliefs, environmental factors, goals and objectives, and the characteristics of policy instrumentalities. Each of these has economic, social, and political dimensions. And agricultural goals and objectives comprise an element of a hierarchical chain of means and ends having broad national goals at their apex and the instrumental goals of specific programs at the operational level (Appendix A).

Societal values that influence both the process of policy formulation and the content of farm policy include a preference for orderly and gradual change, the view that lobbying by interest groups is the essence of participatory democracy, respect for the policies that emerge from between "the hammer of organized pressure groups and the anvil of electoral opinion," and a deep-seated belief in distributive justice as reflected in both social need and economic contribution.

Beliefs about reality that are influential include the perception that farmers are a beleaguered minority opposed by the hostile forces of nature, by rapacious and inefficient suppliers, processors, and handlers, and by the subsidized producers of other countries, and that they are being rewarded for their efforts with meagre and unstable returns. And who can doubt that the physiocratic-agricultural fundamentalist beliefs that farming is an activity that has a value that is greater than its contribution to economic product at market prices, that farmers are people with a disproportionate share of social virtues, and that family-sized farms should be maintained as the basic economic and social unit in agriculture and in rural society are ideological notions that still hold powerful popular and political sway.

Features of the contemporary environment for public policies also influence the final "shape" of farm and food policies. Three seem particularly important.

First, the general state of the economy has an impact on agricultural policy in a variety of ways:

- Preoccupation with inflation has advanced the importance of public policies to stabilize food markets.
- Weakness in the balance of payments and the dollar has reinforced interest in expanding exports of

farm products and substituting food imports with indigenous production.

- Restraints on the growth of government expenditures have placed departments of Agriculture in a position where they are in competition for public funds with other departments of government, have intensified competition between existing farm and food programs and new program initiatives, have heightened awareness of the trade-offs between farmers' incomes, consumers' expenditures, and taxpayers' burdens and, on balance, have disposed towards the use of economic regulation and indirect transfers rather than policy instruments that involve direct expenditures.

- The growing importance of food-related issues in the 1970s in macroeconomic management, in foreign economic policy, and in several areas of social policy has meant that departments of Agriculture have had to share authority and responsibility for public policy on food and agriculture with other departments of government. In turn, the wider constituency for "food policy" has reinforced interdepartmental competition, placed a premium on interdepartmental consultation and policy co-ordination, and shifted the locus of decision making towards the cabinet level of government.

Second, endemic strains on national unity, divided jurisdictional responsibility for agriculture and food, and the tendency for strong provincial governments to make program initiatives at the regional level and to seek a more influential role in national policy development are another set of environmental factors that have left their mark on national agriculture and food policy. The federal government is increasingly concerned with ensuring that national farm policy responds to the disparate regional circumstances, opportunities, and problems of Canadian agriculture, but in ways that simultaneously foster harmonious federal-provincial political relationships and national unity, preserve a national market for farm and food products, and avoid the negation of regional comparative advantage through contending provincial farm policies and programs. This sensitive and difficult task seems to have entailed a greater overall degree of intervention, a higher common factor of farmer protection, and the use of regulatory instruments with more undesirable features than federal authorities would have preferred.

Third, the partisan political environment is, of course, decisively important. Farm policies are powerfully affected by competition between major political parties. The parties contend for the political allegiance of farmers as a voting group by offering attractive farm policies, and strive for regional political success with program packages that are tailored to the commodity composition of Canada's farming areas. It is no accident that farm policy in Canada is dominated by western grains policy and eastern dairy policy.

National Objectives

What are the national objectives for the food system in Canada? One of the more constructive outcomes of the 1970s food policy debate and the mounting demands for "accountability" was that the federal government was moved to spell out the objectives of its policies for the farm and food system and to explain how specific regulatory and expenditure programs contributed to their attainment.

The hierarchical and matrix linkages between general national goals, sector-specific goals, instrumental objectives, and program areas (the means to achieving the desired ends) have been delineated by Agriculture Canada in its publication *Orientation of Canadian Agriculture: A Task Force Report*.[3] The relevant charts are presented in Appendix A. They suggest that Canada's national goals are contributed to by agricultural goals that have a threefold thrust:

- consumer-oriented goals, namely, reasonable and stable food prices, adequate and dependable food supply, and high quality, nutritious foods;

- producer-oriented goals, namely, fair levels of producer returns, stable returns to producers, and reduced economic disparities within agriculture;

- broadly oriented goals, namely, improved quality of rural life, balanced rural/urban population, conservation of the resource base, and fulfilment of international responsibilities in food and agriculture.

These goals are pursued by instrumental goals in the areas of production and marketing, food quality and security, and rural development and income security, and are achieved by operational programs and policy instruments involving government expenditures, regulations and agreements.

A further public statement of agricultural policy objectives was provided for the First Ministers' Conference in February 1978:

> The overall objective of the agricultural development strategy is to assist agriculture in realizing its full market potential and to provide farmers with a standard of living comparable to that enjoyed by other Canadians . . . .[4]

Specific objectives were identified as:

- increasing production efficiency in Canadian agriculture in order to increase the general level of farm incomes and to lower food prices;
- protecting farmers against the income instability resulting from market instability and the natural hazards faced in agricultural production;
- improving the distribution of income among farm families by assisting low-income farmers to increase their income levels through increased productivity of the resources they have and through an expansion of their resource base;
- increasing efficiency in the agricultural marketing system and ensuring equity among the participants in the system;
- maximizing value added in agriculture by ensuring that resources are devoted to those commodities with the greatest market potential;
- providing protection against foreign competition for those commodities where such protection is necessary to ensure the survival of industries with good long-term prospects;
- conservation and improvement of the physical agricultural resource base;
- improving access to foreign markets for Canadian agricultural commodities; and
- recognizing differences in regional needs and opportunities, and overcoming interprovincial resource adjustments in the least disruptive manner.

We suspect that, taken together, these two statements[5] on the ends and means of a sector-specific industrial stategy are without parallel for any other component of the Canadian economy and we applaud Agriculture Canada's making them. But there are obvious limitations that impede acceptance of the impression that the statements sought to convey, namely, that individually and cumulatively the myriad interventions by governments in the food system contribute to the national purpose in constructive, cost effective, and socially benign ways. Five reservations may be noted immediately:

- although purporting to be a sectoral industrial strategy, its objectives, programs and benefits are heavily tilted towards the farming component of the food system;
- conflicts between objectives, and negative relationships between avowed objectives and program results are ignored or understated (this point is underscored in later sections of this study, for it is only as one moves to the specifics of particular programs and commodity policies that negative impacts, contentious trade-offs and questions about the cost-effectiveness of policy instruments are revealed);
- no explicit weights are attached to the numerous objectives that are identified, and implicit weights are not readily discerned; furthermore, target levels of attainment of objectives are not specified;
- no attempt is made to evaluate the benefit/cost relationships that attach to the stated objectives and the policies and programs that are identified as being designed to secure them; and
- the objectives of extending entrepreneurial freedom, preserving the integrity of a Canadian common market in farm products, and moving the agricultural and food industries progressively towards self-reliance are notable by their absence.

The Food Policy Process

Much of the discontent with Canadian agricultural and food policy in the past decade has been directed at inadequacies in the policy formulation process. The process is complex; there are many players and each influence group has a differential impact on final policy outcomes. Heretofore, there has been little systematic study in Canada by students of public policy of the ways in which specific farm and food programs were developed or of the influence of the policy process on program content and performance.

With a view to addressing this apparent void, at least in part, a companion report to this study describes the major institutions and influence groups in the food policy process and assesses their relative impact on the shape of final policies.[6] The major conclusions drawn from this study are that:

- Canadian farmers are well represented in the food policy process (as one would expect, since they should have a direct and strong voice in decisions which affect them);
- farmer inputs into the policy process are often statutory and automatic in that the law under which a particular program operates requires farmers to be active participants in one role or another;
- farmers have greater access to policy makers and exert greater influence on the final outcome of food policies than do other interest groups in the food policy process;
- other groups (farm input suppliers, the PDR groups, and consumers) have been able to increase their input into the food policy process in recent years, but their influence is small relative to farmers, and small relative either to the farm program costs

they must bear or to the impact that farm programs have had on their well-being;

- departments of Agriculture are the most influential group in the development of food policy, with other government departments having a much smaller impact on the food policy process; and
- the most successful and influential general farmer interest group is the Canadian Federation of Agriculture (paradoxically, its success in including farmer representatives in the regulatory and policy advisory process – often to the exclusion of other legitimate interests – has prompted nonfarmer interest groups to lobby, and with some limited success, for increased input in the food policy process).

In the public forum, the general complaint has been that policy making for food and agriculture has fallen short of meeting the criteria of a good system of public decision making.[7] The specific charges include the following features:

- policy and program objectives are not always made explicit and/or are expressed in such imprecise terms as to preclude their prior analysis and performance monitoring and evaluation, and trade-offs between conflicting objectives have been generally de-emphasized and rarely exposed for public debate;
- past policy has been disproportionately concerned with the well-being of farmers, and some farm-oriented programs have been at odds with the broader goals of national policy and harmful to the particular interests of other groups in society;
- more generally, the undue emphasis given to the farm-level issues and to commodity programs has hindered the development of a holistic approach to the food system and of a set of policies and programs that would maximize the sector's contribution to the Canadian economy and to Canadian society;
- the agricultural policy process has not met the criterion that all who are affected by public decisions should have their interests considered and be actively engaged in dialogue and information exchange from the earliest stages of policy and program development, and such analyses as were available within government about the nature and dimensions of problems and the characteristics of alternative policy options typically have not been made available to all those with a stake in the policies adopted;
- the informational content of policy formulation has been too low, and policies have been formulated and introduced with inadequate prior analysis of their allocative and distributional impacts and without quantitative statements about these.
- policies and programs have an insufficient anticipatory content, such that public policy for the farm and food sector has too often been "reactive adhocery" and has shown little evidence of a consistent central "thread"; and
- insufficient co-ordination between the various departments and levels of government that have responsibility for interrelated matters pertaining to food and agriculture, lack of agency co-ordination, and outright rivalry result in inconsistent and conflicting policies and programs that lower the level of accomplishment of public policies and, ultimately, of the food system itself.

These charges are easily made and, no doubt, there is some truth in them. But, how much and with what precise consequences, it is difficult, if not impossible, to know, and our research has not thrown much direct light on the "process" in the context of specific commodity policies.

Policy formulators and administrators will be able to defend themselves from these charges. The present authors also can offer two observations of a mitigatory character.

First, although this is no cause for celebration, there is no evidence to suggest that the process of making economic and social policy for food and agriculture is any more deficient than for other important areas of our national life.

Second, the authors' perception is that, during the 1970s, there were substantial improvements in the policy process for food and agriculture. Both federal and provincial governments have accepted the concept of farm policy as a component of a wider food policy, the latter translating into a sectoral component of national industrial strategy which in turn, is imbedded in and supportive of macroeconomic policy and foreign economic policy. Departments of Agriculture have broadened their constituency to at least acknowledge consumers, food processors and distributors, as well as the suppliers of farm production requisites and other services ancillary to the food production and marketing system. The policy formulation process seems to be more open insofar as genuine attempts have been made to include food system participants other than farmers. Much effort has gone into strengthening federal and provincial consultation and to bringing their respective programs into concert, and mechanisms are in place to improve interdepartmental co-ordination. Additionally, the in-house capability for farm and food policy analysis is now strong in departments of Agriculture; the informational content of decision making is correspondingly greater than previously and there is now more evaluation of existing policies and programs than ever before. All these developments augur well.

A Broad Evaluation

In a situation where multiple and multiplying objectives are being pursued by a myriad of programs, each having numerous and overlapping impacts, and where objectives are neither consensual nor weighted, it is exceedingly difficult, if not presumptuous, to attempt categorical and sweeping judgments about public policies for the farm and food system. Democratic political processes have resulted in a mosaic of public interventions in the food system. Some of these are designed to strengthen market forces, some to attenuate or override them. Development-oriented objectives and programs co-exist with those that are unequivocally protectionist. And policy is animated simultaneously by considerations of efficiency and of equity. The task of the policy analyst would be easier if objectives and instrumental programs were few, explicit, precise, synergistic, stable through time, and unidirectional, but reality is otherwise.

Furthermore, the authors are well aware that to accord economic efficiency and development a status as the paramount objectives and benchmarks of social action, and to prefer the market mechanism as the principal instrument for moulding the business affairs of society, is to be open to the charge of "economic imperialism" and of being lobbyists for a particular ideology and, thereby, profoundly, if unwittingly, political. We recognize that society is more than a business, that social and political considerations are not less important than those that are primarily economic, and that the market is only one instrument of social control. But we also recognize that market place mechanisms regarding price setting and resource allocation work well if used properly. In their desire to change the distributional results of market forces policy makers have not made the best use of the positive aspects of the market place. They have often and unrealistically tried to substitute complex and inefficient regulatory schemes when a combination of market and nonmarket mechanisms may work better. Using market mechanisms to aid in regulatory processes is a far cry from returning to a completely free market system for all commodities but market mechanisms should not be discarded out of hand from the regulatory arsenal.

Irrespective of these caveats and before presenting detailed analysis of policies and programs for specific commodity sectors, four aspects of contemporary Canadian farm and food policies may usefully be identified to round out this introductory discussion.

Two Positive Aspects

First, despite its many and continuing ambiguities, the authors regard the emergence of a "food policy" as a holistic conceptual framework for public policy towards an integrated and interdependent food system as being one of the most encouraging developments that have occurred in recent years. The features that are of particular note in this broadened perception of the target for public policy include: the impetus towards treating the food sector in the context of national economic policy; a better balance between farmers' interests and those of other food system participants; a broader mandate for departments of Agriculture; a wider influence for other departments of government with food system responsibilities and improved co-ordination between them; the renewed emphasis on development and productivity as themes of food sector policy; a more open and informed policy formulation process; and a greater necessity for policy makers and administrators to respond to the demands for accountability for their policy objectives and for established and proposed programs.

Second, with respect to farm policy as such – which is where most of the contentious issues lie – there are found a number of public purposes that are of long-standing and which command universal support. Among these are continuing efforts to promote biophysical efficiency, to create viable and competitive family-operated farm units, to share with farmers the risks of natural hazards, and to develop markets, improve their operational and pricing efficiency, and correct disparities in bargaining power within them. Additionally, animated by considerations of both long-run efficiency in resource use and of equity, farm programs have consistently stressed "stability," "orderly marketing," or the avoidance of the development of depressed market conditions. The above have been enduring themes of Canadian farm policy, they continue to account for the preponderance of programs and effort of departments of Agriculture, and, in our judgment, they are more prominent in Canadian farm policy than in the agricultural policies of most other developed countries.

Even in the controversial area of transfer payments to farmers, several characteristics of Canada's income transfer programs merit respect, particularly when compared with similar programs in other countries. Among these the following may be cited. High rates of effective protection and large transfers are made to the producer of only a few products (notably milk and the "feather commodities"). Widespread use is made of the socially desirable technique of the deficiency payment and other direct subsidies. Subsidies are not paid on an unlimited quantum of output but are tied to production control arrangements. There are limitations on the payments made to individual producers and, for some price and

income stabilization and support programs, producers are made jointly responsible through contributory provisions. And in respect of our agricultural trade policies, most observers would agree that – again with the exception of milk and poultry products – Canada has maintained relatively free access to its market for the low-cost suppliers of competitive products, abjured the extensive use of trade distorting export practices, and acted constructively in international bodies seeking to improve the functioning of world markets for farm and food products.

Two Negative Aspects

Over and above the significant and numerous weaknesses in specific commodity programs that are examined elsewhere in this study, two more general features of Canadian farm and food policy that are worrisome may be remarked at this point.

First, while we recognize the impossibility of knowing which situation would prevail in the absence of past and present programs, we have the impression that in important respects, the accomplishments of agricultural policy have been modest. By any standards, public policy has scored highly in enhancing farmers' incomes while providing Canadian consumers with a safe, nutritious, and secure food supply that is secured by the expenditure of a lower proportion of their incomes than in all other countries save the United States. But, beyond that, the level of achievement of several other objectives of policy is disappointing or ambiguous. The productivity of labour in agriculture has advanced rapidly, but capital productivity appears to have declined and the productivity of total resources used in agriculture has improved at only a feeble rate.[8] Worse, there is a suspicion that this poor productivity performance is a consequence of farm programs that have cosseted the presently inefficient while creating new sources of inefficiency to burden the future. Similarly, while avowed objectives of policy are to preserve the maximum number of viable family farms and to narrow income disparities within agriculture, farm programs have had perverse results in that they have favoured further growth of the larger farms and widened the distribution of income within agriculture. There is little evidence of major advances in industrialization based on the adding of value to raw farm products for domestic consumption or export, or of sustained import substitution firmly rooted in gains in competitiveness. Other performance indicators – flagging exports, the persistence of cycles, continuing food inflation, growing impediments to interregional specialization – all add to the impression that, despite the many attentions of government, the Canadian food system lacks dynamism and falls short of its potential in contributing to growth in the Canadian economy.

The second major area of concern is the drift towards more government involvement in the industry. The policy guideline adopted for agriculture by the federal cabinet in 1970 is now little in evidence.

> Canada's objective in agriculture is a stable industry which is economically viable and self sustaining based on international prices and free trade. However, there is need for transitional assistance designed to help those affected to adopt to the changes involved while ensuring that the objective is achieved within the present generation . . . .[9]

Quite the reverse. Subsidization and regulation of farming have grown rather than diminished. Rather than becoming more self-reliant, the industry has increased its dependence on public policy. There is presently little emphasis on transitional assistance; rather, programs have the stamp of permanence – even of inviolability – and departments of Agriculture appear to want to position themselves to do more for agriculture rather than less. Important commodity subsectors within agriculture (notably milk and poultry) exhibit features one associates with the regulation of public utilities, and some are urging that others in which market forces have hitherto played the dominant role (for example, pork, beef, and potatoes) should take the same course.

Whether there is a connection between these two aspects of Canadian agriculture – ambiguous economic performance and the growth of intervention – can only be discerned by a detailed examination of the objectives and results of public policies for specific commodity subsectors. This is the subject of Part II of this study. First, however, we evaluate the state of Canadian farm incomes, a major force motivating government involvement in the food system.

3 Farm Income Issues in Agriculture

As noted in the previous chapter, public policies towards the food and agricultural sector have a large number of diverse objectives. However, there can be no doubt that a principal purpose of economic intervention in the agricultural sector has been to influence farmers' incomes. Farm income policy in Canada, as in other developed countries,[1] has been directed towards three major ends:

- to ensure that, on average and over time, the rates of returns to resources devoted to primary agricultural production are not less than the rates earned by comparable resources in other occupations – the parity issue;
- to ensure that farmers and their families have an adequate standard of living – the income adequacy issue; and
- to reduce temporal variation in the returns to farmer provided resources – the instability issue.

The Issues

The Parity Issue

Concern with intersectoral parity in the rates of returns is animated by a number of forces.

First, farmers *claim* that in the absence of public intervention, and even with it, market forces provide low rates of return to the human and capital resources they commit to farm production. Indeed, the assertion that farmers are underpaid for their economic contribution commands wide public acceptance.

Second, theories that surround the economics of agricultural product and factor markets have provided a plausible and coherent conceptual case for *expecting* that returns to resources in primary agricultural production will indeed be chronically depressed, thereby providing an intellectual validation for farmers' claims and popular perceptions. Certain economic characteristics explain why resources in agriculture might be expected to be lower than in other occupations. Low income elasticities of demand for raw farm products tend to cause the gross product of agriculture to grow more slowly than the economy as a whole, thereby disposing towards a decline in farmers' incomes relative to incomes in other sectors. Low price elasticities of demand lead to a downward pressure on product prices, gross sales revenues and rates of return to factors of production if (and it is perceived that it does) supply increases at a faster rate than the expansion in demand arising from growth in population and disposable incomes. And, once committed to farming, resources are specialized as to use and location and are retained in production so long as their marginal value product is greater than their salvage value, which may be much lower than their opportunity cost on entry.

Third, there is a belief that market prices do not reflect the full social value of primary agricultural production insofar as they undervalue the benefits of such factors as the growth in the total economy resulting from the release of labour from primary food production, the amenity value of rural space, the enrichment of the social fabric that flows from rural living, lifestyles, and values, and the availability of a secure food supply. It is argued that these wider benefits would be jeopardized if market-determined returns to resources in farming were not supplemented.

To the degree that these factors have substance, income transfer programs for agriculture are justified on the grounds of distributive justice, correction for market failure, and the desire to attenuate the rate of adjustment required in farm numbers and the size of the labour force.

The Income Adequacy Issue

Absolute incomes of farmers from farming are determined both by the per unit rate of return to the resources devoted to agricultural production and by the volume of resources individual farmers command. If it is true that market-determined rates of return are chronically depressed, then this, in conjunction with the unquestionable fact that many agricultural producers have control over human, land, and capital resources that are limited in quantity and quality,

would point to the expectation that farmers would contain within their number a disproportionate number of Canadians with inadequate incomes. Policies that transfer income to farmers are, in part, justified as being aimed at alleviating this problem. Frequently the objective is stated, somewhat elliptically, in such terms as "ensuring adequate levels of income for the operators of small family farms." However, it is unclear whether the intent is to raise the level of income of the poorer farm families to some accepted measure of an adequate minimum level, or to attain the more ambitious goal of raising the mean disposal income of farm families and the distribution around the mean to those of other Canadians, or both.

The Instability Issue

Fluctuations in farm-gate-level product prices and input costs give rise to substantial variations in gross and net farm incomes and to the rates of return to the resources employed by the agricultural industry as a whole and by individual firms within it. Although payments for raw farm products absorb only about 40 per cent of consumers' food expenditures, consumers' expenditures on food and on individual products are also said to be subject to undue variation. Thus, a major aim of public policy is to enhance economic stability within the food sector, with the focal point of policy being to stabilize the farm-level component of the system. Chapter 5 provides a discussion of the grounds on which economic regulation to increase stability are based.

The Evidence

Conceptually, the questions of whether farmers are poor (income adequacy issue) and whether they are underpaid (parity issue) are distinct but related. The nature of these questions and the relationships between them are suggested by Figure 3-1. The upper and lower halves of the diagram distinguish between full- and part-time farmers earning incomes above and below some societal welfare minimum; the left and right halves distinguish between farmers obtaining returns to their resources that are at parity (or better) with the returns that could be earned on comparable resources in other occupations and those who are paid less.

Given that a major orientation of agricultural policy is to redress the ills of inadequate incomes and returns, one would expect that the magnitude of the parity and adequacy problems could be assessed by simply inserting the proportions of the farm population that are in each cell in Figure 3-1. But the disturbing reality is that no one knows how many Canadian farm businesses and families are in cells 1 and 2 and, hence, present problems of neither subparity resource returns nor income inadequacy, and how many are in cells 3 to 8 and, hence, pose efficiency or welfare problems, or both. In attempting

Figure 3-1
The Farm Welfare/Resource Returns Rectangle

Welfare	Resource returns: Greater than parity		Resource returns: Less than parity	
	Full-time	Part-time	Full-time	Part-time
Greater than the minimum level	1	2	3	4
Below the minimum level	5	6	7	8

to shed light on the triad of income-returns issues, the authors have drawn heavily upon evidence provided by a supporting research document prepared by G. L. Brinkman for the overall study.[2]

Claims of low earnings in agriculture have often been supported by looking at average net farm income per census farm or per farm tax filer. This amounted to only a little over $3,000 per farm in 1977. But this average figure masks the facts that there are different kinds of farms with different income characteristics and that farmers have multiple sources of income.

For the sake of simplicity, three composite categories of farmers may be identified: commercial operators, limited-resource farmers, and hobby farmers. Their relative importance to the agricultural industry is shown in Table 3-1. Commercial farmers account for only 28 per cent of total farm numbers but almost 80 per cent of gross farm sales. Commercial farmers earn most of their income from farming. At the other end of the spectrum, almost one-third of all occupiers of farms together produce less than 2 per cent of gross farm sales. The middle group, the largest in terms of absolute numbers and proportion of all farmers, account for only 19 per cent of gross farm sales. Farms in this group typically lack the physical and human resources to produce on the scale of commercial farmers. However, at least half of these farmers have part-time off-farm jobs. It is among the subset comprising slightly less than half of this group (that is, those who do not have off-farm jobs) that the problems of rural poverty and low rates of returns to resources will be encountered.

Table 3-1

Distribution of Farm Tax Filers, by Type of Farmer and Gross Farm Sales, Canada, 1976

	Number of farm tax filers	Proportion of all farmers	Proportion of all gross farm sales
		(Per cent)	
Type of farmer (based on 1976 gross sales):			
Predominantly hobby (less than $5,000)	126,957	31.2	1.8
Limited-resource ($5,000 - $29,999)	164,875	40.6	18.9
Commercial ($30,000 and over)	114,731	28.2	79.3
Total	406,563	100.0	100.0

SOURCE Brinkman, *Farm Incomes in Canada*, Table 2-2, p. 7.

Clearly the heterogeneity of farming cautions against categorical assertions about the income situation of those who farm.

Not only is it necessary to identify the different types of farms in an analysis of farm income, it is also essential to ensure that all relevant components of farmers' incomes have been taken into account.

Farmers have three major sources of income from their farming operations:

- farm net operating income which is basically cash receipts minus cash expenditures and depreciation adjusted for inventory changes;
- income in kind which is primarily the rental value of the houses occupied by farmers living on their properties plus the value of farm produce consumed in the home; and
- capital appreciation.[3]

Furthermore, in making judgments about the social well-being of farm families and in comparing returns to resources in agriculture with returns in other occupations, two other factors must be taken into account:

- income from nonfarm sources which interestingly is the largest single source of income of persons who are classified as farmers; and
- after-tax income which includes the monetary value of the numerous and valuable special taxation advantages afforded to farmers.[4].

The magnitudes of the first four sources of income for Canadian farms, by gross farm sales, for 1976, are shown in Table 3-2.

Income Adequacy

The weight of the evidence is that average income for Canadian farm families is adequate for decent living standards when all components of income are considered. The larger commercial farmers have, on average, very good incomes and have accumulated substantial wealth from capital appreciation to lands and buildings in recent years. Limited-resource and hobby farmers typically have lower overall family incomes, but these too are, on average, quite adequate, especially for farmers with off-farm employment.

In Table 3-3, a comparison of the average net income of "all families" and "all families in which at least one individual reports some net farm income" is presented for the period 1965-76. The incomes shown have not been adjusted to take into account any income in kind, imputed value of house rent, differential taxation treatment, or the equity positions of each group. Even so, since 1973, families having a farm income component received average incomes equal to or above those of Canadian families without income from farming.

Table 3-2

Average Total Returns from All Sources per Farm Tax Filer[1] and per Farm, by Source and Size of Farm (Gross Sales), with Capital Appreciation Measured in Annual Nominal Terms, Canada, 1976

	Average net income per tax filer		Estimate of unreported average income in kind[2] per tax filer		Average per tax filer		Average per farm	
	Farm income	Off-farm income	Food produced and consumed on the farm	Imputed house rent	Nominal capital appreciation on land and buildings	Total returns from all sources	Number of tax filers	Total returns from all sources
	(Dollars)							(Dollars)
Gross farm sales ($):								
50- 2,499	-1,167	13,505	317	2,030	5,983	20,668	1.24	25,628
2,500- 9,999	30	9,522	317	1,568	8,291	19,728	1.19	23,476
10,000-24,999	3,190	5,625	317	1,753	12,079	22,964	1.15	26,409
25,000-49,999	7,589	3,764	317	1,937	16,534	30,141	1.28	38,580
50,000 and over	13,148	3,988	317	2,121	26,439	46,013	1.63	75,001
All farms	3,839	7,603	317	1,845	13,134	26,738	1.26	33,690

1 Farm tax filers are people filing income tax forms who report farm income gains or losses.

2 Data on income in kind have been adjusted to exclude corporation, institutional, and other special farms. The value of unreported home produce is assumed to be equal for all farm sizes and is calculated from the average 1976 value per farm tax filer ($377) times the percentage of the 1974 value (84 per cent) unreported on income tax returns. Imputed house rent, based on the average 1976 value per farm tax filer ($1,845) has been adjusted per size category by 110, 85, 95, 105, and 115 per cent to reflect the approximate differences in house value from the $50-$2,499 category through to the $50,000 and over category, respectively.

SOURCE Brinkman, *Farm Incomes in Canada*, Table 3-16, p. 25.

Table 3-3

Average Net Income from All Sources of Farm Families and Individuals, Compared with the Income of All Families and Unattached Individuals, Canada, 1965-76

		Farm families and unattached individuals			
	Average income of all families[1]	With one member who reports some net farm income[2]	Who live on census farms[2]	With one member who reports farming as principal occupation[2]	With one member who reports net farm income as major source of income[2]
			(Dollars)		
1965	5,779	4,302	4,209	4,301	4,134
1967	6,518	5,089	4,609	4,772	4,663
1969	7,686 (8,026)[3]	6,794	6,151 (5,785)[3]	5,878	6,199
1970	9,600[4]		6,610[4]		
1971	8,845	7,313	6,604[5]	6,533	6,398
1972	9,525	8,293	7,423	7,305	7,145
1973	10,694	11,481	9,700[5]	10,041	10,591
1974	12,437	14,577	13,120	12,537	13,092
1975	13,805	15,161	13,108	13,948	14,973
1976	16,095	18,018	15,862	16,767	16,160

1 Statistics Canada, *Income Distribution by Size in Canada*, Cat. 13-207, annual.

2 Unpublished data from Statistics Canada, Survey of Consumer Finances.

3 W. Darcovich, Z.A. Hassen, W.F. Lu, and B.B. Perkins, "Farm and Non-Farm Incomes in Canada: The 1969 Family Expenditure Survey," Economics Branch, Agriculture Canada, October 1973, Tables 1A and 5, mimeographed. Statistics Canada, *Family Expenditure in Canada, Volume 1. All Canada, Urban and Rural*, Cat. 62-535, Table 11, p. 64. (Using the Standard Occupational Classification of "farmers and farm workers," the estimated population of families and unattached individuals was 266,868 in Canada with an average total income of $5,659.)

4 Statistics Canada, 1971 Census of Canada, *Income of Families, Family Heads and Non-Family Persons*, Cat. 93-724, Table 31. Families only, unattached individuals excluded. Survey of Consumer Finances not conducted in this year.

5 W. Darcovich and M. Mouelhi, *Farm and Off-Farm Incomes of Farm Families*, Publication 7616, Agriculture Canada, Economics Branch, Ottawa, June 1976, Table 8.

To be sure, there are Canadian farm families with low incomes from all sources. In 1977, some 17 per cent of all farm families and 38 per cent of unattached farm individuals had inadequate incomes as defined by Statistics Canada, compared with 11 and 37 per cent for all Canadians. However, such calculations do not take into account the difference between farm and nonfarm families in net worth. When the annualized value of wealth is included, the average real family incomes of Canadian farm and nonfarm families is virtually identical.[5] Furthermore, the incidence of poverty in agriculture has been greatly reduced in recent years.

The fact that a majority of census farms are too small as businesses to provide adequate family incomes in and of themselves may be a source of regret to those who would prefer to see a more homogeneous and specialized industry composed of full-time businesses that generate adequate incomes for their operators predominantly from farming operations. But this is not how agriculture is structured in a modern society, and its creation would entail a drastic reduction in the number of persons who farm. As it is, the present heterogeneous structure of farming, in which there is a mix of commercial and noncommercial, full-time and part-time farms, and in which off-farm income is at least as important a source of income as farm income for many families that farm, makes it possible for Canadians who farm to enjoy standards of living that are on a par with those of Canadians who derive their incomes from other occupations.

Parity of Returns

Remarkably little is known about the returns to resources in farming. However, the evidence presently available on the rate of return to human and capital resources committed to farming, though very slender, is equally as encouraging as that of income adequacy. Data on relative rates of return are not available for all of Canada for long periods, but the results provided by the only empirical study that appears to have been undertaken – for 194 Ontario farms for the 1970-74 period – indicate that commercial farmers earn rates of return to their resources quite comparable to the rates earned by similar resources in the nonfarm sector (see Table 3-4). In fact, commercial farms with annual sales over $50,000 in 1974, which was quite a modest business size even then, had returns in excess of parity. The medium-sized businesses in the sample, with sales of $25,000 to $50,000, earned less. Limited-resource and hobby farmers, with sales of less than $15,000, were not studied. Had they been, it is possible that they would have been found to be earning low returns to their labour, management, and equity. However, this does not necessarily mean they are underpaid in agriculture. Many operators of small farm businesses are poor managers, or are farming for reasons other than profit. It may be noted that developments since 1974 in farm income, capital appreciation of land and buildings, and tax laws have all favoured farmers. This reinforces the tentative conclusion that Canada's commercial farmers earn parity returns on the resources they commit to agriculture.

Table 3-4

Ratio of Farm to Potential Nonfarm Returns for Commercial Farms, by Farm Size, Farm Type, and Region, Ontario, 1971-74

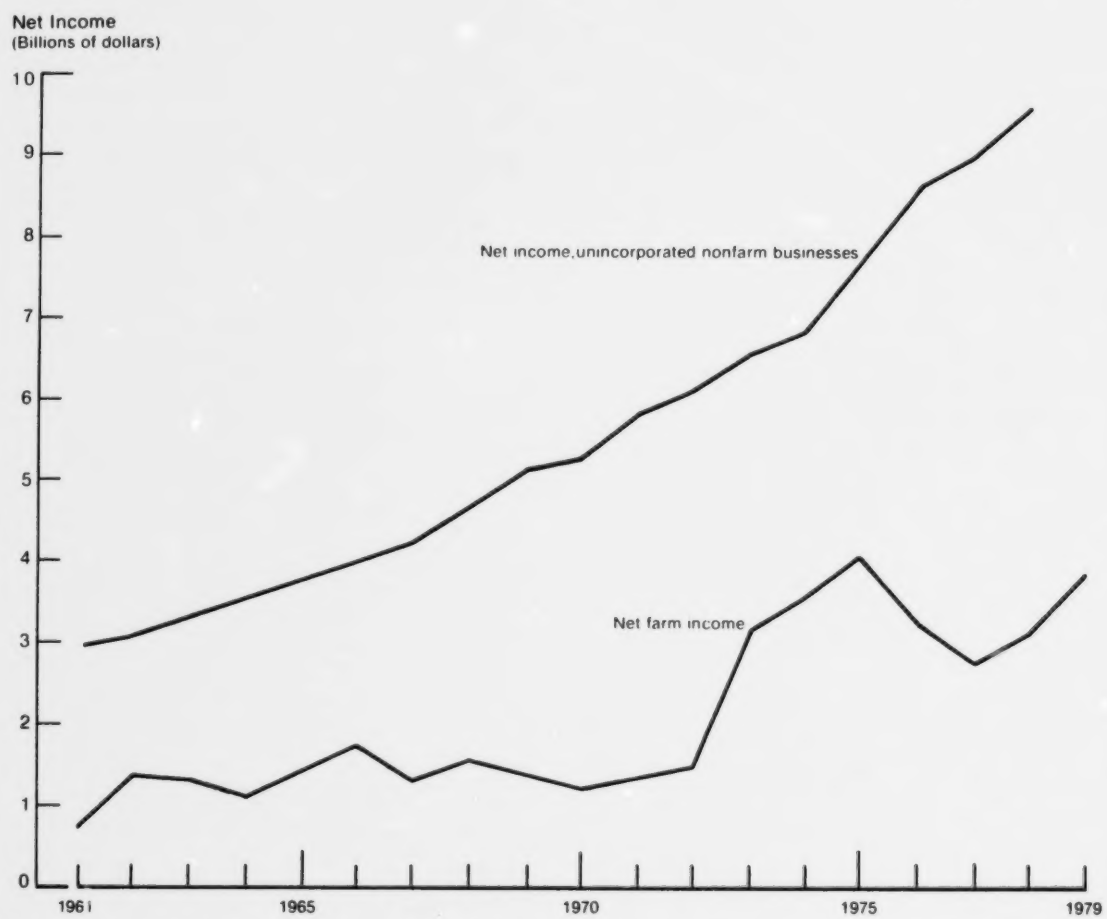
	Self-employment standard		Wage-earner/stockholder standard	
	A	B	A	B
	(Ratios)			
All farms	0.96	0.83	0.93	0.70
Farm size based on gross sales ($)				
15,000-24,999	0.73	0.53	0.70	0.46
25,000-49,999	1.00	0.89	0.94	0.72
50,000 and over	1.19	1.21	1.25	1.06
Farm type				
Dairy	0.98	0.81	0.92	0.67
Cattle	0.88	0.72	0.90	0.66
Hog	1.03	0.88	1.01	0.77
Crop	1.00	0.97	0.98	0.80
Mixed	0.86	0.66	0.80	0.50
Region				
Southern	1.02	0.93	1.00	0.79
Western	0.93	0.80	0.93	0.71
Central	0.92	0.71	0.91	0.59
Eastern	0.85	0.73	0.79	0.60
Northern	0.81	0.57	0.64	0.41

A - Including capital appreciation.
B - Excluding capital appreciation.
SOURCE Brinkman, *Farm Incomes in Canada*, Table 4-4, p. 40.

Income Instability

As Figure 3-2 shows, aggregate farm income is much more unstable than the income of the group with which farmers may most properly be compared, nonfarm unincorporated self-employed business persons. This high degree of farm income instability over time is even more pronounced for particular commodity groups, for farmers in particular regions and for individual farm business, and is apparent for both the farm and total (farm and off-farm) operator income of full-time farmers and multiple job holders who farm.[6] The evidence on the instability of incomes in farming is clear and incontrovertible.

Figure 3-2
Net Income of Unincorporated Nonfarm Businesses, and Net Farm Income (Excluding Net House Rent), Canada, 1961-79



SOURCE Adapted from Brinkman, *Farm Incomes in Canada*, Figure 5-2, p. 45.

Other Indicators

Another measure of the economic health of an industry is the extent to which the industry can attract new entrants. If it is evident that new entrepreneurs are continuing to enter the industry over time then this is *prima facie* evidence that the returns to be earned in that industry are at least equivalent to returns that could be earned in alternative industries. For agriculture as a whole, the picture would again seem to be encouraging. Over the past decade, there has been about 50 per cent turnover of all farmers. Contrary to popular belief, farm operator age is declining and younger farmers are entering the profession. Further, although only highly aggregated information on the education levels of farm operators are available, it is reassuring that, in terms of formal education, the level of training of farm operators has been increasing steadily over time.

Farm Incomes and Transfer Payments

Farm incomes are importantly influenced by income transfer programs. As is shown in Table 3-5, direct payments through commodity programs operated by the federal and provincial governments together with federal input and marketing subsidies

Table 3-5

Aggregate Net Farm Income, Direct Government Payments through Commodity Programs, Federal Income and Marketing Subsidies, and Payments and Subsidies as a Proportion of Aggregate Net Farm Income, Canada, 1965 and 1970-78

	Aggregate net farm income[1]	Direct payments through commodity programs[2]	Federal subsidies[3]	Direct payments plus subsidies	Proportion of aggregate net farm income		
					Direct payments	Subsidies	Direct payments plus subsidies
	(Thousands of dollars)				(Per cent)		
1965	1,484,854	70,391	53,760	124,151	4.7	3.6	8.4
1970	1,275,635	185,835	115,539	301,374	14.6	9.1	23.6
1971	1,425,960	137,993	201,249	339,242	9.7	14.1	23.8
1972	1,633,947	197,795	187,449	385,244	12.1	11.5	23.6
1973	3,219,940	283,220	136,418	419,638	8.8	4.2	13.0
1974	3,580,193	482,518	226,149	708,667	13.5	6.3	19.8
1975	4,135,894	554,349	307,759	862,108	13.4	7.4	20.8
1976	3,376,881	486,167	439,988	926,155	14.4	13.0	27.4
1977	2,899,211	740,637	309,819	1,050,456	25.5	10.7	36.2
1978	3,266,174	442,660	386,763	829,423	13.6	11.8	25.4

1 Excluding net house rent but including income in kind from food produced and consumed on the farm.
2 Includes provincial income stabilization programs (1973 onward).
3 Crop insurance, producer financing, storage and freight assistance, and trade promotion.
SOURCE Brinkman, *Farm Incomes in Canada*, Table 6-2, p. 54.

accounted for 23.7 per cent on average of aggregate net farm income, excluding net house rent, during the 1970-78 period. Such direct transfers rose steadily from $301 million in 1970 to $1,050 million in 1977 before dropping to $829 million in 1978. To these very substantial direct transfers must be added the further indirect transfers afforded by agricultural market control programs, frontier protection, and the taxation advantages enjoyed by farmers. Clearly, farmers are deeply dependent upon public income support programs for their economic well-being.

The benign picture that emerges about the economic condition of farming in Canada – essential equivalence in the social well-being of farm and nonfarm families and, at least during the 1970s, parity in the rates of return to comparable resources in farming and other occupations – does not in itself call into question the need for economic regulation of the agricultural industry. For social and economic parity for agriculture is observed only after governments have caused income to be transferred to farmers on a substantial scale. But it would suggest that, since 1973, the agricultural industry *as a whole* has had no case for demanding that income transfers in its favour should be expanded. With present programs on their current scale, it would appear that most of those in agriculture who are commercial farmers are neither poor nor underpaid; those who have low incomes from farming operations are not primarily farmers; and, of course, having regard to the unequal abilities of individuals, it is probable that many of those who are commercial farmers and earning low returns to their resources are not underpaid.

Furthermore, there is abundant cause for concern about present income transfer programs. These include questions about whether alternative approaches to fostering economic and social parity for agriculture would not be preferable, and questions about the cost effectiveness, the maldistribution and ephemeral character of benefits, and the perverse structural consequences of present income transfer programs centred on product prices. These matters are addressed in the following chapters.

4 Income Transfer Policies

Economic regulation of agriculture results in transfers of income to farmers from other members of society. Transfers are not unique to agriculture. They occur in all sectors of the economy and only generate controversy when it is believed that the transfers are excessive or unfair to one or more of the donor or recipient groups.

This penultimate chapter before the analysis of specific commodity programs identifies the range of income transfer tools in use in Canada and indicates how they redistribute incomes among members of the food system. It then makes some observations about the general characteristics of commodity-centred income transfer programs, evaluates the effects of these transfer policies on the nonviable, marginally viable, and viable farmer groups identified in the previous chapter, and recommends consideration of an alternative perspective on approaches to resolving the income problems of the diverse groups within agriculture.

As has been noted earlier, in little more than two generations farming in Canada has moved from a labour-intensive, traditional occupation, operating in a predominantely agrarian society, to a capital and technology-intensive interdependent subcomponent of an industrialized food and fibre system. Labour has been shed at an astonishing rate and farms have become fewer, larger, more specialized, more dependent on capital and purchased inputs, and more integrated with the food manufacturing and distribution industries and foreign markets. The normal response of economists when confronted with this kind of industrial transformation is to say that, if there is a role for government at all, it should be to facilitate and ameliorate the process of adjustment. However, neither policy makers nor farmers have seen much appeal in promoting accelerated adjustment in farming, rightly observing that "the economists' solution is precisely the farmer's problem."[1] Instead, farm policy has taken the alternative tack of protecting agriculture and transferring income to farmers so as to slow the need for, and attenuate the hardships of, inevitable adjustment.

Income Transfer Instruments

A wide variety of instruments are employed by Canadian authorities to achieve policy goals that are related to the level and stability of farm income. These can be classified into three major categories. First, there are programs that aim to lower costs of production by raising technological, operational, and organizational efficiency. Second, some programs are designed to raise competitive returns from the market by equalizing bargaining power, improving the efficiency of marketing, and promoting market development. Third, there are programs that are concerned with transferring income to farmers. This is a composite category that has three subcategories:

- direct subsidies involving public taxation and expenditure designed to bolster product prices by such means as flat-rate subsidies, deficiency payments, support purchases and export subsidies, and subsidies designed to lower the costs to farmers of such inputs as capital and transportation services;
- indirect subsidies provided through the protection of domestic products against competitive imports by using tariffs, quantitative restrictions and a variety of other nontariff trade barriers, and the income transfers effected through the establishment of marketing monopolies; and
- a mixed bag of transfer programs that include differential income tax treatment for farmers vis-à-vis other groups and the exclusion of substitute products from the market place.

These instruments are rarely used singly. Rather, it is usual to find that a set of instruments is used in combination to effect the price and income objectives of agricultural policy. This is illustrated in Figure 4-1, which shows the use, by commodity, of the major commodity-centred transfer payment instruments listed above.

In Figure 4-2, the broad impacts of the income transfer instruments on participants in the food system are shown. Needless to say, as primary producers are the targets of the income transfers

Figure 4-1

Major Income Transfer Instruments Used in Canadian Agriculture, by Commodity Group

	Dairy	Eggs	Broilers	Turkeys	Sheep	Hogs	Beef	Wheat	Barley	Oats	Flax	Rapeseed	Soybean	Corn	Forage	Horticulture	Potatoes	Tobacco
Flat rate subsidy	X																	
Price support[1]					X	X	X	X[2]	X[2]	X[2]			X	X		X	X	X[3]
Margin support								X	X	X	X	X						
Support purchase	X															X	X	
Export subsidy	X																	
Food aid	X							X										
Tariff	X	X	X	X	X	X	X	X	X		X	X	X	X		X	X	X
Surcharge																X	X	
Import quota or embargo	X	X	X	X			X	X	X	X								
Price discrimination	X	X																
Transport subsidy								X	X	X	X	X						
Storage subsidy	X															X	X	
Supply restriction	X	X	X	X														X
Consumer subsidy								X										

1 Insofar as there is a positive margin over cash costs in the base period, the Agriculture Stabilization Act guarantees a proportion of market determined value added which, however, varies between commodities and over time.
2 Price support is only for wheat, oats, and barley not included in the designated area of the Canadian Wheat Board Act.
3 Price guarantee is provided by the Canadian Tobacco Manufacturers Council.

programs, each instrument provides a positive transfer to this group. Input suppliers generally benefit when farmers are better off financially, whereas taxpayers, consumers, food manufacturers and distributors, and foreign producers frequently experience a negative impact, that is, they bear the cost of the income transfer programs.

The reasons why government chooses particular policy instruments for different commodity subsystems has not been systematically examined but, presumably, the choice is influenced by such factors as:

- cost-effectiveness criteria;
- the allocative and distributional attributes of the instrument;
- commodity market characteristics and parameters;
- political acceptability;
- administrative feasibility;
- certitude in delivering desired benefits at predictable costs; and
- historical antecedents and piecemeal elaboration.

This issue of the determinants of policy instruments choice is an important point. For while economic analysts tend to emphasize only the first two of this list, policy makers and administrators must take account of all of them. Furthermore, because of the differential impacts of particular instruments on the various participants in the food system (see Figure 4-2) on the system as a whole, and on the overall economy, it is not easy for economists to make unequivocal and authoritative statements about what constitute "good" and "bad" instruments. To be sure, they can measure allocative and distributional effects and the cost-effectiveness of alternative instrumentalities in the attainment of particular objectives, but most analysts have had little to say about the other criteria that influence the choice of policy instruments. Subject, of course, to resource and time constraints and to the fact that we were specifically directed to evaluate economic impacts, this study and the companion research reports have tried to address each of the considerations listed above.

It is also important to differentiate between the use of instruments to support product prices and farmers' incomes above long-run competitive levels and their use as short-run stabilization devices. Consumers, for

Figure 4-2

The Impact of Farm Income Transfer Instruments on Food System Participants

	Inputs supplier	Producer	Processor	Wholesale and retail	Consumer	Taxpayer	Importer	Exporter	Foreign producer
Flat rate subsidy	+	+	+	+	+	-	-	+	-
Price support	+	+	+	+	+	-	-	+	-
Margin support	+	+	+	+	+	-	-	+	-
Support purchase	+	+	-	-	+	-	-	-	-
Export subsidy	+	+	-	-	-	-	0	+	-
Food aid	+	+	-	-	-	-	0	+	-
Tariff	+	+	-	-	-	+	-	0	-
Surcharge	+	+	-	-	-	+	-	0	-
Import quota or embargo	+	+	-	-	-	0	-	0	-
Price discrimination	+	+	±	±	±	0	±	±	-
Transport subsidy	+	+	+	+	+	-	-	+	-
Storage subsidy	+	+	+	+	+	-	-	+	-
Supply restriction	-	+	-	-	-	0	-	-	-
Consumer subsidy	+	+	+	+	+	-	-	0	-

\+ Positive impact.
\- Negative impact.
0 No direct impact.

instance, may with justice complain if supply is continuously below and price above equilibrium levels. They have no grounds for complaint if interventions do no more than neutralize short-run surpluses, provide stop-loss floor prices, and involve relatively small and distributionally benign income transfers.

General Characteristics

The commodity studies lend support to several generic observations about policies that are designed to transfer income to Canadian farmers:

- the explicit objectives, target groups, and performance levels of income redistribution policies are worrisomely vague and legislative mandates are broad and imprecise;
- empirical knowledge about the levels and distributions of resource returns and incomes in farming, which is needed both to justify and to evaluate transfer policies, is remarkably thin (Brinkman's contribution, summarized in Chapter 3, is a major advance in this regard);
- most of the problems and controversies associated with the allocative and distributive effects of programs that transfer incomes to farmers stem from the level of support provided rather than from the choice of instrument;
- the method employed to transfer income to producers is not, however, a negligible consideration, for the available instruments do have a differential impact on the various participants (see Figure 4-2), on food system performance, and on the overall economy;
- no instrument can reconcile fundamentally conflicting objectives; that is, no instrument can be expected to provide, simultaneously, higher incomes for farmers, lower prices for consumers, and a reduced burden for taxpayers.
- if effected by raising product prices, income transfer programs that are sold to the electorate as a means of alleviating the problem of income inadequacy among low-income farm families are a political charade, for benefits accrue in proportion to output and poor farmers produce little and sell less; that is, such programs widen the maldistribution of income within agriculture;
- the benefits of income transfer programs to farming as a whole may be quite transitory if higher and more certain returns are capitalized into the values of assets in inelastic supply, notably land and quotas;
- worse, to the degree that this occurs, first-generation benefits become additional costs to the next generation of farmers who must buy the assets,

and capitalization of benefits into equity positions becomes a barrier to program change, thus aggravating the built-in propensity for transfers to ratchet upward; and

- insofar as income transfer programs are aimed at "preserving the family farm," the results may well be perverse, since the maldistribution of the benefits of commodity (and input subsidy and taxation) programs encourages the growth of larger-than-family farms while the capitalization of commodity program benefits into asset values raises barriers to entry.[2]

The Need for Accountability

It can reasonably be expected of governments that they provide more information about the income support programs they operate for farmers. It is recommended that governments should be required to provide, on a regular basis, answers to the six basic questions listed below.

- How much income is being transferred to farmers each year by expenditure programs and regulatory activity?
- What evidence supports the need for such transfers?
- How are the program benefits distributed within agriculture?
- What is the cost to society at large of such programs in dead weight welfare losses, and what are the distribution effects on taxpayers, consumers, and other system participants and foreign producers?
- What is the degree of effective protection accorded to farming as an industry and to each commodity segment of Canadian agriculture, and how does this compare with other sectors in the economy?
- What steps are being taken to reduce the future need for transfer payments to agriculture and by what dates can it be anticipated that specific programs can be terminated?

The relevance of these questions is brought out by the analysis of specific commodity programs presented in Part II.

The Need for Specificity in the Design of Farm and Food Policy

At the beginning of this chapter, we noted that a major purpose of farm policy in Canada has been to protect agriculture and transfer income to farmers. An alternative thrust, that of facilitating and ameliorating the process of structural adjustment in agriculture, has been given little prominence. Yet to neglect adjustment assistance means that the current level of income transfers will at least continue and likely increase as real incomes in the rest of the economy rise and farmers seek parity.

Many current income transfer programs operate on the broadside principle. That is, their underlying assumption is that *all* producers within a particular sector covered by an income transfer program need income support.[3] Yet farming is not a homogeneous industry, although policy makers and farm organizations are inclined to speak of it and, more especially, treat it in this manner. As has been shown, it is a highly heterogeneous industry consisting of hobby and retirement farms, part-time farms operated by multiple job holders, part-time farms operated by full-time farmers, economically viable family farms, larger-than-family farms, farming empires and factories-in-the-field. These groups have different circumstances, problems and prospects. More pertinent, they also have different needs and so demand a differentiated public policy response. A view of farming that fails to differentiate between the circumstances and needs of different groups within agriculture will dispose to a distorted and overly dyspeptic view of farming's economic well-being and to overly generous income transfer policies.

In Chapter 3, three basic categories of farmers were identified, namely, commercial farmers, limited resource farmers, and hobby farmers. An alternative way of looking at these groups that sheds light on their economic circumstances and policy needs is to categorize them as the nonviable, the marginally viable, and the already viable farm businesses.

Nonviable farm businesses — These are farm businesses that are too small to be operated as full-time businesses so as to yield their operators adequate incomes at any conceivable level of commodity prices. Numerically, they constitute a majority of Canada's census farms. They fall into three groups.

First, hobby and retirement farms. There is no compelling reason why these should be of any social or economic concern, or the object of public policies animated by considerations of the adequacy of farmers' incomes.

Second, part-time farms operated by multiple job holders. The income status of this group is also not of public concern. For the most part, their operators have adjusted their labour input to the farm capital and land available. The families on such farms generally have adequate total incomes from all sources and may very well approach parity in the rate of return to the resources they devote to farming. They are a heterogeneous group. For example, some are in transition to full-time farming status, some are in transition out of agriculture, and many will remain

as part-time operators. They do present a range of issues (other than income adequacy) that are worth examining. One question is whether part-time farms should be recognized as a permanent and not an unproductive feature of modern agriculture and, therefore, whether existing part-time farmers should have access to public programs. Another is whether full-time farmers on part-time farms should be assisted to become multiple job holders and join the part-time farm and part-time farmer group. Still another question is the desirability, form, and magnitude of assistance to those in transition to full-time farming.

Third, part-time farms operated by full-time farmers. The operators of these farms are the core of the income problem in agriculture. With limited resources, they have low absolute incomes. With inappropriate factor proportions, outdated technology, no scale economies, and low volumes of sales, the rate of return to their resources is low. Their lot cannot be fundamentally improved by income transfer policies that are centred on bolstering product prices or subsidizing the cost of inputs. There are three alternative approaches:

- Discourage entry onto such farms. This could be done by conducting active education and information programs to acquaint potential entrants to farming with the economic realities of modern agriculture and to dispel the myth of their moving up "the farming ladder." Additionally, policy can aim at eliminating such farms by purchasing them through public agencies operating farm consolidation and enlargement programs.
- Assist their operators to become multiple job holders or to move out of farming. This would entail a mix of programs. The maintenance and creation of alternative work opportunities, and the provision of information on jobs and assistance with retraining and relocation is one approach. It would help those who move into supplementary jobs and those who move out of farming alike. The second component was previously provided by the Small Farm Development Program. Operators of nonviable farms who were abandoning farming altogether were helped to sell their farms, were given a capital grant and, most importantly, were permitted to continue to occupy the farm house. Sadly, the program has been terminated.
- Pay social transfers to those remaining. Some of the farmers in this group are too old, too infirm and too unadaptable to do anything else but farm. Their productivity in agriculture is low, but higher than in any other occupation. There are two approaches to this group that could be pursued. The oldest ones could be given special retirement grants or old age pension supplements based on the European model.[4] The younger ones could be treated as part of the working poor. They could be given direct income supplements under an agricultural social payments scheme. Better yet, they could be helped by a general negative income tax program.

Marginally Viable Farm Businesses — These are predominantly full-time family farms. Their occupiers have medium-sized businesses and employ fair technologies. They are not losing money but their absolute incomes and the rates of return earned to the resources provided by their operators are modest. Their economic circumstances and performance would be poor were it not for income transfer programs. With the transfer programs that bolster their returns, their net farm incomes are sufficient to provide a reasonable standard of living and progressively retire their long-term debt, but they are insufficient to generate the economic surplus required for self-sustaining growth. As such they are trapped in dependence on the continuation of agricultural programs. These farmers may be young entrants who cannot get above the first rungs of the farming ladder. They include also established farmers who resent their dependence on government, who are anxious about their future, who are concerned that their farms will not yield the rising standard of living that the rest of society seems destined to enjoy, and who fear that their children will not follow them in the business.

The owners of the smaller farms in this group will eventually move to a part-time status and it may be argued that public policy should help them to do so. But there is also a need for programs that help the owners of the larger farms in the group and the more capable operators to increase their scale; lower their costs, and move to a situation in which they do not require sustained income transfers from the rest of Canadian society.

These farms are presently short of physical, financial, and managerial resources. Their need is for more land and more capital and management counselling. This was precisely the focus of the now-defunct Small Farm Development Program under which farmers were assisted to acquire additional land on favourable terms, were provided with medium-term capital under the Farm Improvement Loans Scheme, and were exposed to intensive management counselling by the agricultural extension services on the planning of the organization, financing, and operation of their farm businesses. This last also assisted in acquiring working capital from private lending institutions. Some of these adjustment assistance elements are still to be found in federal and provincial agricultural programs dealing with credit, farm consolidation and enlargement, land

banking, and extension. However, as was mentioned earlier, there is now no real prominence given to agricultural structural adaptation programs of this nature in federal agricultural policy. In the authors' view, this is a deficiency since it implies that the major thrust of farm income improvement policy must continue to be towards income redistribution.

Already Viable Farm Businesses — There is in Canadian agriculture a group of producers who are, by any standards, economically viable. They are the 15 per cent of Canadian farms that now produce two-thirds of total Canadian agricultural output. They number perhaps 60,000 farm businesses. These operations are large only by agricultural standards. In a wider context, they would be regarded as successful small businesses. They are predominantly family farms. They use modern technologies. They have positive attitudes towards using borrowed capital. They are constantly growing in their scale of operations. These farms are now the economic core of commercial Canadian agriculture.

The operators of this type of farm business attract the bulk of the benefits provided by existing income transfer programs (a situation about which they have not been observed to complain) albeit that public support for such programs derives from a wish to assist smaller farms. Yet the operators of the larger farm businesses require neither sustained subsidization of products and inputs nor adjustment assistance, for they are economically viable at internationally competitive prices, earning enviable incomes and parity returns, and generating surplus funds for investment and growth.

This is not to say that there are not things that these farmers can reasonably expect of society. On the contrary, they should be the target of public policies, but of policies that are designed to address their specific needs. These farm businesses need assistance in six areas:

- Such services as new technologies, market information, and plant and animal health are beyond the reach of such small businesses and should continue to be regarded as public goods provided from the public sector.

- Like other businesses, these farmers are highly dependent on the successful management of the overall economy and require stable growth and an economic climate conducive to investment. More especially, their great and growing dependence on purchased inputs and borrowed capital, and the fact that they are price-takers in product markets buying from price-makers in factor markets, give them a particular stake in the control of inflation.

- These farmers require that governments conduct an active commercial policy on their behalf. This encompasses the exercise of commercial diplomacy and the conduct of market development programs to expand sales abroad, the search for measures that would stabilize international commodity markets and, not least, the lowering of trade barriers on the imported inputs they use.

- Some would argue that governments should seek to influence agricultural factor supplies. This should not include the provision of subsidized capital and energy; they can well afford to pay market prices. However, there may be a place for land development and conservation, land use planning, and manpower training and supply programs.

- Large as they are, these farm businesses are dwarfed by the industries with which they deal. They therefore may need public assistance to correct disparities in bargaining power that may exist in the market. Since Canadian competition policy promises little, they need to be able to countervail the market power of the suppliers of their inputs and the purchasers of their products through voluntary cooperatives and, in some instances, by mandatory producers' marketing boards. In this regard, we hasten to add that this does not mean that these farmers need marketing boards with "extractive" supply management powers. (In any event, the viable farmers are growers, not buriers, by inclination and from among their ranks come the most vociferous critics of the regulatory roadblocks to their continued development.) Also, it is axiomatic that the need for countervailing power should be clearly established before boards are created and its use should be effectively supervised.

- Finally, insofar as there is any substance to the three-element case for stabilization programs in agriculture (see Chapter 5), these commercial farmers should be provided with a coherent set of measures that would enhance stability in farm product markets. These include market intelligence, strengthened futures market, crop insurance, commercial policy, marketing boards with stabilization-oriented supply management powers, and public programs that provide stop-loss floor prices and/or underwrite market-determined gross margins.

Conclusions

The implications of the above for the nature and shape of farm policy is clear. The heterogeneity of farming requires a corresponding selectivity in the choice of farm programs designed to reach particular

farm groups. Currently, price and income support policies do little for the numerical preponderance of farm businesses, not least for those in greatest need of public assistance. Indeed, most of the benefits of such programs accrue to those producers in least economic need, as we shall see in Part II.

5 Stabilization Policy in Canadian Agriculture

An avowed objective of Canadian[1] agricultural and food policy is to enhance economic stability within the food system, an objective that commands wide support with food system participants generally, and with the farm sector in particular. As Chapter 3 shows, the aggregate net incomes of farmers are more unstable than the incomes of other self-employed businessmen. Farmers' concern about fluctuations in the level of their income and governmental policy responses to address this concern would seem well-founded.

The Causes and Costs of Instability

The food system is inherently unstable. In the short and intermediate run, both consumption and output are inelastic with respect to price, and supplies and demands vary spasmodically with uncontrollable variation in weather and biological factors, the actions of foreign governments, and the availability and price of substitutes. Strikes, transportation breakdowns, faulty market information, and similar factors can cause short-run market perturbations of substantial magnitude. Longer run instability is manifest in the cobweb cycles that result from the overreaction of atomistically-organized and ill-informed producers to current prices and costs.

Because Canada generates about 40 per cent of farm incomes from foreign sales and imports a large proportion of the supplies of certain products it consumes, the Canadian food system is particularly vulnerable to instabilities in world markets.

In an interdependent food and agricultural system, disturbances at one point are quickly transmitted to other parts of the system; for example, instability in grain markets soon spills over into animal agriculture, and induced variation in the supply of animals for slaughter is reflected in the level of activity in the meat packing industry and in variable retail prices for meats.

Three reasons are normally advanced for justifying public interventions to enhance stability.

First, stability is said to be valued in its own right; that is, social utility derives from a more secure and predictable economic environment. It may be noted also that there is a rather weak body of theorizing that purports to show that stability increases net social welfare.[2]

Second, unstable markets cause large and arbitrary redistributions of income that serve no socially useful purpose. In concrete terms, producers may be unnecessarily enriched and consumers forced into involuntary rationing when markets are undersupplied; conversely, farmers may be ruined while consumers buy "too cheaply" when markets are stressed by oversupply. Smaller farm businesses with slender equity positions and low-income consumers are especially vulnerable, and they are the particular concern of this equity-animated argument for public intervention.

Third, there is a whole set of arguments that hinge round the proposition that allocative efficiency in the whole food system will be enhanced if markets are made more stable and if the signals they generate for producers and consumers are more predictable and certain. These efficiency arguments include the following:

- the wastes of cycles of over- and underinvestment would be averted;
- the overall level of investment and, hence, output would be higher if farm and food firms produced under conditions of price certainty;
- there would be less excess capacity in the processing and distribution sector, which is now overbuilt to handle peak through-puts;
- in a more stable environment, farmers and providers of marketing services would face less internal and external capital rationing and would be

more prone to specialize by product line and in production technologies;

- the required rate of return to resources invested in the food system would be lower if risks were reduced; and

- international agricultural trade would be more liberal if sporadic instabilities did not spawn trade interventions, which are difficult to reverse. Importers would be less disposed to autarkic food supply strategies and less concerned with source diversification if world food markets were less volatile and if individual exporters were more consistent and reliable suppliers of assured volumes at stable prices.

In short, instability is said to impose substantial economic costs on the Canadian food system and impede its development.

Public agricultural stabilization policy seems to be animated by all three of the above sets of considerations, namely, the social superiority of stable and secure income flows, the desirability of avoiding inequitable and dysfunctional income redistributions, and the need to improve the environment for investment decisions. However, some groups and considerations have had particular weight. Thus, public programs have focused on farmers and, more especially, on their protection against the adverse income effects of downside market risks. The official view seems to be that beneficial effects for other food system participants will derive from stabilizing returns in farming. Public statements have also emphasized the developmental rationale for placing floors under product prices and farmers' returns.[3]

The Range of Cures for Instability

Like other businessmen, farmers make use of private arrangements for coping with market instability. These include enterprise diversification, prudent financial management, availability of the special cash accounting and income averaging provisions of the tax system that are provided to agricultural businesses, and the use of forward contracting and futures markets. Public policies supplement these private avenues. They have done little to strengthen them, nor have public and private measures been integrated.

There is a multiplicity of instruments of public policy used to promote stability in Canadian agriculture:

- producers of crops are protected against natural hazards by highly subsidized insurance programs;

- market news services, especially those having a forward-looking situation and outlook component, are aimed at influencing producers' expectations and decisions and constitute a form of government/industry indicative planning;

- the government discourages disorderly marketing by programs that subsidize storage facilities and provide cash advances;

- as noted elsewhere, supply management programs have stabilization objectives, though in practice they are operated in ways that place more emphasis on the level of farmers' incomes than on their stability;

- commercial policy has a number of elements that contribute to stability, including trade liberalization (which widens the area over which production and consumption adjust to changes in world supplies and demand); protection against dumping and other forms of unfair competition; according temporary protection to producers subject to fair but disruptive competition; and participation in bilateral trade arrangements and international commodity agreements;

- finally, there is a set of programs that act directly to stabilize prices and incomes for primary producers. These are described for specific commodities in some detail in Part II and include such programs as the initial payments program and the Western Grain Stabilization Act (WGSA) for Prairie grains, the Agricultural Stabilization Act (ASA), and formula pricing for the supply managed commodities.

Concerns about Stabilization Policy

It will be apparent from the foregoing that the federal government has made a substantial commitment to enhancing stability in the food system. This federal effort is importantly supplemented by provincial regulatory and expenditure programs, particularly in the areas of crop insurance, marketing boards, and direct price and income stabilization and assurance.

In principle, this thrust to Canadian farm and food policy is commendable since it has the capacity for conferring benefits on all food system participants and the system as a whole. For there can be little doubt that there are substantial real micro and macro

costs associated with unstable farm and food markets. However, while we have no specific recommendations to make on stabilization policy *per se*, we do have some concerns about Canadian agricultural stabilization policy and programs that are worth highlighting here before proceeding to the commodity analyses in the next chapter.

First, the distinction should be maintained between the concepts of "stabilization," "support," and "assurance," particularly since these terms tend to be used interchangeably in both popular discussion and in official statements on farm and food policy. Stabilization implies reducing the amplitude of fluctuation and the frequency of change of some economic variable, whereas support and assurance imply some effect on its level also. The efficacy of "pure" stabilization policies in Canadian agriculture cannot readily be measured since all stabilization programs directly or indirectly entail income transfers to farmers. Indeed, it may be questioned whether there would be a demand for stabilization programs if the transfer element were removed. What is more pertinent and worrisome is that income transfer programs have been introduced and subsequently justified under the rubric of "stabilization" in ways that discourage or obfuscate public debate about the legitimacy of the transfer component. Supply management programs are the most obvious example, but the same features can be found, to a lesser degree, in the ASA, the WGSA, and in agricultural trade policy.

Second, it should be noted that the efficiency/development case for providing stabilization arrangements, of which so much is made by farmers and farm policy makers, is essentially theoretical and intuitive. An alternative hypothesis – that low price periods purge the industry of inefficient producers and force all firms to use resources more efficiently, while high income periods result in large investments in modernization – is equally plausible.[4] No one has yet tested either hypothesis. Specifically, the advocates and administrators of stabilization programs have not yet presented evidence of the extent of the stability their programs have induced, linked the altered economic environment with changes in the expectations of food market participants, and correlated these with changes in participant behaviour. Quantitative evaluations of the allocative effects of Canada's agricultural stabilization programs are long overdue.

Third, the efficacy of major stabilization programs, and notably, the ASA, in promoting stability of output, efficiency in resource use, and steady development of farming is open to some question simply because farmers are not provided with tangible forward price and margin guarantees that might affect their investment decisions. The "stability" payments under the ASA might more properly be regarded as discretionary, retroactive, compensatory income supplements. The proposed GM-100 scheme, discussed in Chapter 10, is to be welcomed for a number of reasons, one of the more important being that it is intended that it should be used to provide forward (but market-oriented) margin guarantees that convey planning signals to producers.

Fourth, the federal government has maintained that it views instability as a short-run phenomenon and that it does not intend its stabilization programs to guarantee returns to inefficient producers, or to shield producers from the need to adjust to long-run market trends and changes in regional and international comparative advantage.[5] The ASA (excepting industrial milk), the proposed GM-100 amendment, and the WGSA come close to meeting this test, as do the anti-dumping and safeguard provisions of commercial policy. By contrast some federal and provincial supply management and cost of production pricing programs have gone so far in assuring producers' returns as to attenuate drastically the influence of market forces within the nation's boundaries and to severe their links with international markets and foreign competition. That is, stability for some commodities is being provided in ways that perpetuate high-cost production, create distortions in interregional production or trade, and erode international competitiveness. It may be no accident that the most stable subsectors within the food system (milk and poultry) are the most inflexible, balkanized, subsidized, and internationally uncompetitive. There is a fine line between stabilization and ossification.

Fifth, the considerations of equity which have encouraged governments to provide programs to keep farmers solvent in low-price periods and assure them "fair" returns at all times, have not been so evident in high-price periods when low-income consumers have been under stress. Yet stability of food prices for consumers might also be a legitimate objective of stabilization policy for the food sector. As it is, consumer food subsidies have been few and short-lived, and departments of Agriculture and farm organizations have not been noticeably active in seeking to augment supplies or set price ceilings in periods of commodity shortages. This strengthens the impression of some that "food stabilization policy" is often "income transfer policy for farmers" in convenient guise.

Sixth, there are doubts about the potential for a high level of accomplishment in public policies to enhance stability in the food system as a whole. As stated, instrumental programs are focused on farm

prices and gross margins. The practical linkages between these and the target variables of resource returns in agriculture, supplies and costs in the PDR sector, and supplies to and expenditures of domestic and foreign consumers are by no means clear. This is the more so since raw farm product cost accounts for less than 40 per cent of final consumer food expenditure, and the Canadian food system is largely open to the influence of uncontrollable fluctuations in international food markets. Even at the level of the farming component of the food system, it is not evident that a commodity-by-commodity approach to stabilization through a collage of public federal and provincial programs, none of which are finely tuned to intercommodity relationships and all of which are superimposed upon a variety of private sector stabilization arrangements, constitutes a consistent, coherent and synergistic stabilization policy that is capable of bringing stability to farming. And if farming cannot be stabilized, there is no reason to have high expectations about the derivative stability promised for other parts of the food system.

Seventh, while it is not possible to identify the conditions that would have prevailed in the absence of stabilization programs, it is manifest that, despite all that has been done, and by any measure including international comparisons, farming and the food sector are still highly unstable. It is an unresolved issue whether this (presumably) undesirable condition is due to the ineffectiveness of the current program mix and levels, or whether it reflects the low level of stability attainable in the sector unless government, the industry and society at large are prepared to go the whole hog and (as in milk and in poultry) turn the food industry (or at least its farming component) into a fully planned, tightly managed, public utility. The commodity studies in Part II caution that stability achieved by this route may entail substantial costs in efficiency and equity.

One final thought. The demand for stabilization programs is strongest from those in Canadian agriculture who are averse to taking risks. The supply of such programs is provided by people who share this attribute. Most people fear uncertainty to some degree, but perhaps they should fear even more the kind of society in which risks are removed and risk-taking is discouraged or made unlawful. For human progress is, to a large degree, a history of entrepreneurial risk-taking. Market economies are animated by both the prospects of profit and the threat of loss, by greed and by fear. To assure a place in agriculture for those who are the most averse to risk, and to engineer the food system in ways that maximize security, may have adverse effects on the rate of innovation and progress. To minimize or remove risk from the economic system, in the long run, may be to embrace the greatest risk of all.

Part II

Commodity Case Studies

6 The Poultry Sector: Eggs and Broiler Chickens

There are approximately 2,300 egg producers in Canada covered by provincial and national marketing schemes. In 1979, they produced about 460 million dozen eggs, with a farm value of $342 million, which represented 2.4 per cent of total farm receipts in that year. Almost 40 per cent of total egg production is based in Ontario, followed by 16 per cent in Quebec, and about 13 and 11 per cent, respectively, in British Columbia and Manitoba. There were no significant exports of eggs from Canada in 1979 and imports – at 7.6 million dozen – represented less than 2 per cent of total supply.

About the same number of regulated broiler producers (2,300) produced 850 million pounds of broiler chicken in 1979. The farm value of this output was $460 million, representing 3.2 per cent of total farm cash receipts. Over two-thirds of broiler chicken production is based in Ontario and Quebec, and British Columbia is a distant third with 10 per cent of national production. Exports of broiler chicken were negligible in 1979, and imports – largely of live birds – were 50 million pounds, representing around 6 per cent of total domestic supply.

In 1978, a total of 143 hatcheries, 133 feed manufacturers, 91 feed supplement suppliers, 73 drug suppliers – 440 suppliers in total – depended in part or completely on supplying the broiler and egg industries for their business. Beyond the farm gate, 107 poultry processors, 474 egg grading and/or packing stations, and 17 egg product processors handled and processed broilers or eggs prior to final purchase by consumers.

Canadian consumers spend about 2 and 5 per cent of their total food budget on eggs and broiler chicken, respectively. Through the 1970s, the chicken component of the consumer price index (CPI) increased at a similar rate to that of the CPI for "all food," while the egg component increased at a slower rate – the annual average rate of increase was 9.7 per cent for eggs, 11.7 per cent for broiler chicken, and 11.3 per cent for "all food." Per capita consumption of broiler chicken increased by 10 pounds between 1971 and 1979 (from 29 to 39 pounds per capita), while per capita egg consumption declined from 22 dozen in 1970 to 18 dozen in 1978, although it turned up in 1979 (19 dozen per capita) and is expected to have increased again in 1980.

In economic terms, the Canadian poultry sector is not of great importance – the two commodities account for only about 6 per cent of total farm cash receipts and 7 per cent of the consumers' total food budget. However, the sector has considerable importance from an agricultural and food policy perspective. Broiler chicken and egg production and marketing are, in some respects, the most fully "organized" of any commodity sector in the food industry. Since proponents of agricultural regulation have advocated similar regimes for other product groups, it is important to determine whether these models perform satisfactorily as a guide to the appropriateness of extending such regulatory modes to other commodities.

Problems

Present policies in the poultry sector have their origins in technological and market developments in the industry in the 1950s and 1960s. The poultry industry was the first commodity sector to experience scientific industrialization. Rapid technological advances caused a dramatic reduction in costs of production, an increase in output, a fall in real prices, and extensive structural and organizational changes in an environment of intense competition. Competitive pressures were particularly strong in the egg production business where demand for eggs was stagnant.

The specific problems of Canadian producers were many. Margins were narrow and large numbers of small-scale egg and chicken producers stopped producing eggs. Economies of size were such that the production of eggs and chickens seemed destined to gravitate to much larger units than existed in the 1950s. Through the 1960s, there was a period of sustained low prices as well as considerable seasonal and cyclical price variation. This drove less efficient

producers out of business and placed financial stress on even the most efficient operators. Eggs were covered by the Agricultural Stabilization Act of 1958 but the program under this Act provided limited relief in periods of market stress. Broiler chickens were not a named commodity under this legislation. Finally, despite some tariff protection, the output of a larger and more advanced egg and broiler industry in the United States, which effectively set the level of prices and marketing margins in North America, was the principal source of much of the market instability experienced in the poultry sector.

During these years, changes in the structure and ownership of the poultry industry in the United States were of great concern to Canadian producers. In addition to the fear that family-sized farm production units would gravitate to "factories in the field" was the fear that vertical integration of ownership of poultry production by feed companies and processors would lead to the erosion of farmers' status as independent businessmen and to the shifting of control to nonfarm interests. While we have seen little evidence of these occurrences in Canada, the contractual arrangements that were occurring south of the border only paid farmers fees for services provided and reflected disparities in bargaining power between producers and integrators. Therefore, the policy responses of government during this period took place in an environment of economic stress and producers' fears of the importation of an integration process that was taking place only a few miles away.

Policy Responses

At its simplest, the central themes of government policies that evolved to resolve these problems in the poultry sector were to reduce the level of horizontal competition among producers and to put control of the market into their hands.

During the early 1960s for broilers and the late 1960s for eggs, the provinces made the first regulatory initiatives with the establishment of producer marketing boards. The provincial boards all limited participation in the production process through the establishment of licensing provisions. Some boards exercised supply management powers and set prices within their province. However, the influence of the boards on both the levels and stability of product prices and returns was small. The U.S. market was still the major determinant of Canadian egg and broiler chicken prices and the boards did not have collective control over aggregate national production nor on the movement of products between provinces.

The boards' lack of control over egg and broiler chicken prices and supplies within their provincial jurisdiction led some boards to establish administrative barriers to interprovincial trade in poultry products. Such measures spawned retaliation by other provinces and, by the early 1970s, the notorious "chicken and egg wars" were being waged between Ontario and Quebec.

The federal government felt that it could not stand idly by and watch interprovincial market warfare, and acted both to restore market order and to preserve the integrity of the common market for eggs and broiler chickens in Canada. The Farm Products Marketing Agencies Act, promulgated in 1972, was the legislative response. Under this Act, the Canadian Egg Marketing Agency (CEMA) was established in late 1972. The agency was authorized to regulate the price and the quantity of eggs produced in Canada as well as to control the interprovincial movement of eggs. After a few false starts, the Canadian Chicken Marketing Agency (CCMA) was established in 1978 with a broadly similar mandate.

The salient features of the "national marketing plans" for eggs and broiler chicken are that:

- National, provincial, and individual quotas are set to provide the quantities of eggs and broiler chickens demanded at administered prices.
- For eggs, CEMA establishes monthly a producer price for Grade A large eggs in each province. This is done by using as a base a formula-determined national weighted average farm gate cost of production plus a prescribed rate of return on capital and an allowance for risk and for certain marketing costs. The resultant is the Ontario price. The Manitoba price is the Ontario price less handling and shipping charges from Manitoba to Ontario. Other provinces use Winnipeg as a base point (Nova Scotia is the base for Prince Edward Island and Newfoundland), and their price is the base point price plus shipping and handling charges from the base point. Provincial marketing boards and the CEMA co-operate in setting the prices of the other grades and sizes of eggs produced in their province.
- For broilers, each province sets its own price based partly on a cost of production formula and partly on other factors.
- Imports of eggs and broiler chickens are limited by import quotas, such imports also being subject to tariffs.
- The provincial producer marketing boards have control over who may participate in egg and broiler chicken production by establishing the maximum size of production unit any one producer may operate, and making the rules governing the allocation, retention, and transfer of quota so as, ostensibly, to maintain the family farm character of their industry.

Table 6-1

Summary of Selected Estimates of Benefits and Costs of Broiler Regulation, Canada by Province, February 1980

	Quota value per bird	Total valuation	Average capitalization per producer	Annual income benefits		Consumer costs		
				Total	Average per producer	Per pound	Per capita	Per family
	(Dollars)		(Thousands of dollars)			(Dollars)		
Nova Scotia	6.00	9,000	67	1,400	11	0.05	1.91	6.69
New Brunswick	4.00	7,000	159	1,100	25	0.05	1.80	6.65
Quebec	6.10	154,000	166	24,600	27	0.09	4.24	14.82
Ontario	9.50	156,000	218	25,000	35	0.09	3.19	10.84
Manitoba	6.00	10,000	83	1,600	13	0.06	1.77	6.03
Saskatchewan	7.00	6,000	100	1,000	16	0.05	1.20	4.21
Alberta	5.00	22,000	138	3,500	22	0.06	1.97	6.90
British Columbia	12.00	77,000	405	12,300	65	0.14	5.04	16.65
Canada	-	394,000	193	70,500	31	0.09	3.24	11.34

SOURCE Peter L. Arcus, "Broilers and Eggs," Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy, Technical Report E/I 3, Ottawa, 1981, Tables 10, 12, and 15.

Regulation Results

Economic intervention and regulation in the poultry sector in recent years has created some features that are positive for some groups – particularly for egg and broiler chicken producers. It may properly be claimed that:

- production of those commodities is now a profitable venture where once returns were chronically inadequate for many and sporadically depressed for all;
- returns from egg and broiler production are somewhat more stable relative to the 1960s and early 1970s;[1]
- the rate of decline in the number of producers has been slowed, although not halted;
- the production and marketing systems for eggs and broiler chicken are firmly controlled by farmers;
- farmers have slowed, in some cases stopped and even reversed, vertical ownership integration by agribusiness participants, and have substantially enhanced their bargaining power in negotiating production and marketing contracts;
- egg and broiler chicken production has been maintained as a predominantly family farm enterprise; and
- the regulatory system entails no significant government expenditures or direct government involvement in market management.

These features of current policies are positive from the point of view of egg and broiler chicken producers alone. For other groups with an interest in the poultry sector, the results of regulation have been predominantly negative, particularly in respect of the enormous and regressive transfers in income that poultry industry regulation has entailed.

In a paper commissioned to provide background research material for this study, Arcus[2] estimates the income transfers in 1980 associated with regulation. By translating the capital value of quotas into imputed annual additional income flows – that is, returns in excess of normal profits – he estimates that the annual economic benefits to egg producers resulting from regulation is $45 million or, on the basis of each registered egg producer, around $20,000 per year. Corresponding figures for the annual economic benefits to broiler chicken producers are $70 million, or $30,000 a year for each producer. In the aggregate, the capital values of these benefits are estimated to be $282 million for egg producers, or $123,000 per registered producer, and $441 million in the aggregate for all broiler chicken producers, or $193,000 per regulated broiler chicken grower in early 1980. A summary of the economic effects of egg and broiler chicken regulation is presented in Tables 6-1 and 6-2.

The problems of measuring income benefits from quota values are discussed in Appendix B. The authors believe that quota values are an acceptable measure of the economic benefits that producers are obtaining from economic regulation of the poultry industry. In fact, present values of and broiler production "rights" may actually underestimate the income being transferred to the producers of these commodities by market regulation since current quota values

Table 6-2

Summary of Selected Estimates of Benefits and Costs of Egg Regulation, Canada by Province, February 1980

	Quota value per bird	Total valuation	Average capitalization per producer	Annual income benefits		Consumer costs		
				Total	Average per producer	Per dozen eggs	Per capita	Per family
	(Dollars)	(Thousands of dollars)				(Dollars)		
Newfoundland	5.00	2,000	53	300	8	0.06	0.87	3.48
Prince Edward Island	5.00	1,000	22	200	4	0.11	2.44	9.03
Nova Scotia	5.00	5,000	94	800	14	0.07	1.53	5.36
New Brunswick	12.00	5,000	119	800	18	0.13	1.43	5.29
Quebec	10.00	35,000	114	5,600	18	0.10	1.17	4.10
Ontario	15.00	124,000	137	19,800	22	0.14	2.81	9.55
Manitoba	5.00	13,000	43	2,100	7	0.07	3.30	11.22
Saskatchewan	5.00	4,000	32	600	5	0.06	1.04	3.64
Alberta	5.00	8,000	28	1,300	4	0.06	1.05	3.68
British Columbia	32.00	85,000	443	13,600	70	0.28	5.80	19.14
Canada	-	254,000	123	45,100	20	0.13	2.36	8.26

SOURCE Arcus, "Broilers and Eggs," Tables 11, 13, and 16.

are below their equilibrium levels because of impediments in the transfer of quota between low- and high-cost producers within and between provinces.

By the same token, the sum of the annual equivalent of the capital values of quotas plus compliance and supervisory costs may well be underestimating the burden of regulation on Canadian consumers of eggs and chicken. This is because quota values reflect the present value of future net benefits after the egg and poultry industry has been forced to use more resources than necessary to produce any given quantities of output. The higher-than-necessary cost structure results from generalized underutilization of production facilities, and such features of quota administration policies as nontransferability, transfer only with production facilities, maxima on quota holdings, and the exclusion of integrators. That is to say, quota values are probably lower than they would be with present product prices and *potential* production costs, and the income transfer from consumers is correspondingly underestimated. Even without taking account of the fact that consumers must pay the additional costs of production attributable to quota management policies, Arcus estimates that the income transfer from consumers resulting from regulation in the egg industry is around $56 million per year, or $8.26 per family and 13 cents per dozen eggs. The corresponding figures for transfers from Canadian consumers of broiler chickens are $77 million per year, or $11 per family and 9 cents per pound of broiler meat.

The above income transfers are, of course, highly regressive, as the benefits accrue to producers in proportion to the size of their businesses rather than their need, while the burdens fall on consumers according to their purchases rather than their ability to pay.

One further set of income transfers is of considerable interest. This is the payment that must be made to the original recipients of quotas by those who succeed them. This intergenerational income transfer among producers themselves is, of course, the value of quota rights at the time of their transfer. The recipients of these payments are removing all future benefits to producers from regulation, while those who must pay for production rights receive normal profits, but with a higher cost structure, which consumers must bear so long as the regulatory program lasts.

Some other income transfers cannot be measured, though they may be significant. These include transfers to poultry industry input suppliers and to importers of eggs and chickens and their products, and transfers from domestic processors and from foreign producers excluded from the Canadian market.

Because of budget limitations and the complexity of the analytical exercise (investigating two products in ten provinces, with different quota administration and pricing practices in each), the Arcus study provides no estimates of the social cost of regulation, other than to delineate some direct compliance costs.

However, research undertaken by Borcherding[3] on the British Columbia market for eggs and by McManus[4] on the Ontario market for broiler chicken indicates that the social costs of reducing supply and raising prices above equilibrium levels by methods that entail a backward shift in the industry supply function can be very high. Borcherding puts them at 60 per cent of the annual income transferred to producers and McManus shows how they might even be as high as 200 per cent.

There are additional social costs that could not be researched: the welfare losses to society associated with reductions in the quality of eggs and chickens; the excess production of "breaker" eggs; the excessive levels of inventories that chicken processors have been forced to hold; and the loss of export markets because of uncompetitive pricing. This last is particularly relevant given the current value of the Canadian dollar.

Even more worrisome is the social cost to Canadian society of the loss of a good part of the Canadian egg and broiler chicken industries if present regulatory policies persist for some time and are then changed at some future date. For by that time, a high proportion of quota will have been purchased by new entrants, today's benefits will have been transferred into tomorrow's costs, and the poultry sector will be hopelessly uncompetitive and extremely vulnerable to foreign suppliers who have continued to improve their efficiency rather than to artificially raise their production costs.[5]

The Need for Regulatory Reform

The original rhetoric that clothed poultry industry and government policy statements about regulation of the poultry sector in the early and mid-1970s had some appeal. Regulation was promoted with the promise that it would provide:

- "orderly marketing";
- enhanced sectoral stability;
- increased efficiency in production and marketing;
- balanced benefits for producers, processors, distributors and consumers;
- "fair" returns to efficient producers and "reasonable" prices to consumers; and
- the establishment of a dynamic and outward looking poultry sector.

Somehow, things have got badly out of hand. "Managing supply to meet demand" and "coordinating the efforts of provincial boards so as to inject a degree of stability into the market place" have proved to be euphemisms for establishing an inflexible monopolistic regulatory system. In addressing the problem of inadequate and unstable producer returns, the agencies and marketing boards have been permitted to provide extravagant returns to producers on modest-sized holdings operated in inefficient ways. Attenuating destructive competition has been accomplished by creating an anticompetitive system. In attempting to safeguard the common market for agricultural commodities in Canada, the very principle has been shattered and the national market for eggs and chickens has been effectively balkanized.

Regulation in this sector has been offered as a model for other commodity groups, but to many it must appear an odious example of precisely what should be avoided if the Canadian food system is to reach its potential.

It is also a salutary monument to regulatory failure at both federal and provincial levels. Results such as those presented above merely confirm the findings of earlier studies;[6] the excesses in the egg and broiler chicken industries have long been known, but the responsible statutory regulatory agencies (SRA's) have maintained a thunderous silence. In the final analysis, the situation portrayed is also an indictment of the policy process and parliamentary control of it. For it is doubtful if earlier policy makers intended, or if present legislators could now justify to their constituents, a regulatory regime for eggs and chickens that transfers over $100 million a year to 4,600 individuals and that has resulted in the creation of artificial property rights worth close to three-quarters of a billion dollars.

If experience is any guide, pressures for reforming regulatory arrangements in the poultry industry will not come from governments, which find in the existing order the virtue of avoiding direct expenditure and involvement in market management. And existing producers – who received free allocations of quota, who find current price-cost relationships generous, and who will take all future program benefits with them when they leave the industry – are unlikely to favour change. Four groups, however, can be expected to press for regulatory reform. The first is the next generation of egg and broiler producers who, under present arrangements, may be excluded from participation in the production process because of lack of capital to buy quota, who perceive that the programs offer them no benefits once they have paid the entry fee, and who are well aware that the permanent cost burden they must bear once they have bought quota is a threat to their viability should policy change. Second, the authors anticipate that reform will be supported by those agricultural industry

leaders who perceive that the excesses of current regulatory arrangements for eggs and broiler chickens are putting these commodity sectors in jeopardy in the longer term and are bringing the producer marketing board movement as a whole into disrepute in the present. Third, food processors are pressing for change because their input costs are higher than many of their foreign counterparts. And, finally, consumers continue to press for more equitable poultry prices.

Responsible Regulation

The authors are not opposed to regulation of the poultry industry; indeed, they well understand the case for intervention in general and, for cartelization, for formula pricing and for supply control in particular. But they are concerned with the abuse of these techniques in ways that are indefensible to the public at large and dangerous to the long-term health of the industry.

Reform of the regulatory arrangement for the poultry industry seems urgent if present excesses are to be removed and future calamities are to be averted. Such reform might be guided by a number of principles:

- price should provide normal profits to producers of an acceptable and rising standard of efficiency;
- the regulatory system should enhance stability of output, prices, and returns;
- efficient producers should be protected against bankruptcy in periods of market stress and from unfair competition and distress selling from foreign sources;
- the system should provide mechanisms for correction of disparities in bargaining power between producers and other industry participants;
- egg and chicken market control arrangements should respect the integrity of the Canadian common market;
- statutory regulatory agencies should have clear and firm authority over poultry cartels and ensure that they operate in the public interest;
- there should be mechanisms for the self-correction of regulatory abuse; and
- the present generation of producers should hand the industry on to their successors in a better competitive shape than when they entered it.

Much could be done within the present policy framework to provide more acceptable regulatory results. A large number of recommendations for changing supply management programs, formula pricing arrangements, and regulation of marketing boards are made in the later chapters of this study. All these recommendations apply, *a fortiori*, to egg and chicken production, pricing, and marketing arrangements. However, the specific changes that are required in egg and chicken pricing and production control arrangements can be identified briefly here.

A first priority is to remove the "water" from the cost of production formulas. This entails resetting the base price to reflect the costs of production on more efficient operations than the present "model" production units.[7] This means basing cost of production calculations on larger units, with lower input/output coefficients and operating at capacity. In addition, in the case of eggs, changes need to be made in the treatment of freight and handling charges so as to ensure that producers do not receive more than the target rate of return.[8] Public confidence in the pricing system would be enhanced if the establishment of the costs of production for model egg and broiler units was undertaken by statutory regulatory agencies and not by the producers themselves.

The second step required is to change the procedures by which base prices are updated to reflect changes in current costs. Two measures are recommended. First, pricing formulas should more surely reflect improvements in the productivity of resource use as well as changes in the unit prices of inputs. This entails more frequent and independent updating of production coefficients or the inclusion of an automatic productivity factor in the cost of production formula. The second measure would relate the value of quotas to the formula-generated prices in such a manner that quota values would be used as the indicator of the adequacy of product prices relative to production costs.

Another suggestion is to change those quota administration policies that impede productivity improvements and reductions in production costs. Measures contributing to this goal include freer transferability of quotas between producers and higher maximum amounts of quota that may be held by individual producers.

We should have liked to recommend other measures such as the free movement of quota between provinces and the auctioning of new quota by the national agencies or the statutory regulatory agencies so as to permit production to move to areas of lowest-cost production. However, as long as product prices, profitability, and quota values are so different between provinces, and bear so tenous a relationship to regional comparative advantage, the result of creating a national market for quotas could well be that quotas would move to the wrong places. Hence,

this step must wait until changes in pricing arrangement for eggs and broiler chickens alter the national value of quotas to reflect real differences in comparative advantage between regions. In the meantime, the National Farm Products Marketing Council should ensure that the allocation of new national quota is based on regional efficiency rather than on historic shares or population changes.

Few changes in trade arrangements need be made. For reasons of consumer protection, it is imperative that the government retain control of the volume of imported products. This means that the right of "first receivership" should continue to be denied to the national agencies for eggs and broiler chickens. In the unlikely event that the output of eggs and chicken broilers should fall in response to the establishment of lower producer prices within Canada, import quotas could be correspondingly enlarged. The authors know of no compelling security, economic, or social reasons why Canada should aim to be 98 and 94 per cent self-sufficient in eggs and in chicken broilers, respectively.

Finally, the complete submergence of the public interest in favour of the interest of a small number of farmers follows, as night follows day, from the almost complete absence of public interest representation on the SRA's which make and administer policy for feathered products.[9] Nonvoting advisory groups are a toothless vehicle for the consideration of other legitimate interests and, unless and until independent, public interest representatives are accorded a majority position on SRA's (discussed in detail in Chapter 13), it is highly doubtful that we will observe much meaningful change.

If changes within the present policy framework such as those suggested above fail to produce more acceptable regulatory results, then more draconian measures should be considered. At the limit, this could entail the abandonment of the present supply management and cost of production pricing arrangements and a move to treat eggs and chickens in broadly the same manner as other commodities. That is, eggs and broiler chicken producers could be afforded stop-loss floor prices or minimum market-determined margins under the Agricultural Stabilization Act or the proposed GM-100 scheme, respectively, with price or margin deficiencies being made up by deficiency payments. Alternatively, if this would leave too much instability in the poultry industry, or too low a level of self-sufficiency, or producers' incomes that were thought inadequate, then output and producers' incomes could be sustained by a direct payment program. Whichever option was selected would incur less dead weight loss for society and would transfer less income to producers than the present policy. Protection from unfair and/or sporadically disruptive import competition could be provided by minimum import price and surcharge arrangements. Producers' marketing boards would still play a role in such areas as correcting disparities in bargaining power, improving the operational and pricing efficiency of markets, and market development. The "costs" of moving in this direction would include: increased federal government expenditures on stabilization or support payments;[10] greater market instability; substantial reductions in producers' current incomes and net worths; and the departure from the industry of some producers. Gains would include: a lower consumer burden; a less regressive and more open system of making possible whatever level of transfer payments to producers was desired; a lower level of resource commitment to producing eggs and chicken broilers in Canada; restoration of a national market for entrepreneurship in poultry production; the possibilities of developing export markets for these products; lower initial barriers to entry into their production by new producers; and enhanced cost competitiveness for these producers thereafter.

7 The Dairy Sector

In the 1976 agricultural census, more than 90,000 farmers reported having one or more milk cows on their farms. Of this number, more than 50,000 had sales from milk and/or cream that exceeded $10,000 in the 1976 census year. Farm cash receipts from dairying were $2.8 billion in 1979, representing 20 per cent of total farm cash receipts and making it the third most important farm commodity after cereal grains and beef cattle. Of the $2.8 billion in receipts, 60 per cent came from farm sales of milk and cream, 30 per cent from sales of calves, cull cows, and dairy cattle for export, and about 10 per cent from federal government subsidy payments.

In 1979, some 6.9 million kilolitres of milk were sold from Canadian dairy farms. Approximately 37 per cent of this milk was sold for fluid purposes (that is, for consumption as fresh milk) and 63 per cent was sold for industrial purposes (that is, for consumption as manufactured dairy products such as butter, cheese, yogurt, ice cream, and so on). The fluid market is supplied by "fluid milk producers" who are licensed specifically to sell milk that will be consumed as whole, 2 per cent, or skim milk. The industrial market is supplied by specialized "industrial milk producers," who are licensed specifically to sell milk that will be consumed as manufactured dairy products. That market is also supplied by cream shippers and the producers of milk that is surplus to the requirements of the fluid milk market produced by fluid milk shippers.

Dairy farming is a significant farming activity in virtually every province, although production is by no means evenly distributed across the nation. Three-quarters of milk production is based in Ontario and Quebec. Indeed, almost one-half of the national industrial milk production is produced in the province of Quebec. As a result, the relative importance of the dairy sector in the provincial farm economies shows wide variation: in Quebec, one-third of all farm cash receipts are accounted for by milk sales; in Ontario, the figure is close to 20 per cent; in the Prairies, milk sales account for less than 4 per cent of total farm receipts.

In terms of value of shipments, the dairy processing industry is the second largest, after the meat processing industry, in the Canadian food manufacturing and processing sector. In 1979, the value of dairy product shipments from processing plants was $4 billion. Reflecting the location of milk production, the processing industry is based largely in Ontario and Quebec. Over the past ten years, there has been considerable rationalization in the dairy processing industry; whereas, in 1970, there were 880 milk processing plants, this had fallen to 485 by 1979, a decline of 45 per cent. Farmer-owned dairy processing co-operatives are a notable feature of the industry structure, particularly in Quebec. In 1978, the value of shipments of dairy products from farmer-owned co-operatives was $1.2 billion, of which almost half ($557 million) came from Quebec dairy co-operatives.

Canadians spend almost one-sixth of their total food budget on milk and dairy products. Slightly less than half of that budget is spent on fluid milk, and slightly more than half on processed dairy products like butter and cheese. Through the 1970s, the dairy product component of the CPI increased at a faster rate than the CPI for "all items" but less than the CPI for "all food."

Dairy foods are a crucial component of the national diet, being a particularly important source of calcium, protein, and vitamin D (which is added to fluid milk at the processing stage).

There are a number of features of the demand for and supply of milk and dairy products that highlight the very specific problems the dairy sector faces.

- Farm sales of milk and cream over the two-year period 1979-80 were about 9 per cent *lower* than in 1970-71. Total milk production in Canada peaked in 1965 and has declined slowly since that time, although subject to irregular year-to-year changes.[1] This decline in domestic milk production is not a result of an increase in imported dairy products (indeed, virtually all dairy products consumed in Canada are produced from milk from domestic dairy farms). It reflects declining demand for dairy products

in the aggregate at the administered price levels that have prevailed.

- In general, while cheese consumption has expanded vigorously, fluid milk consumption has only just kept pace with population growth and annual per capita consumption of butter has declined from 15 to about 10 pounds during the past decade. The role of butter consumption in the dairy sector is pivotal. It takes approximately 24 pounds of milk to make 1 pound of butter. The impact on the demand for raw milk of 24 million Canadians eating 5 pounds of butter per year less than they did ten years earlier is self-evident. If the figures for the U.S. market (where per capita butter consumption is less than 5 pounds) are any indication, butter consumption in Canada may continue to decline from its current level. If this is the case, then production of milk will fall further in the future.

- The prospects for reversing the decline in farm production of milk through export market development are bleak. There has been a surplus of dairy products on world markets for decades. Markets in developed countries are, typically, protected by stringent trade barriers. Canada is a relatively high-cost milk producing nation. Further, the federal government does not intend to emulate the European Economic Community and heavily subsidize the exportation of unlimited quantities of dairy products surplus to domestic requirements. One bright though minor note is that there is a healthy export demand for pure-bred Canadian dairy calves and dairy cattle. In 1979, export sales of these animals were valued at almost $50 million.

- The number of dairy farms in Canada has undergone consistent and considerable rationalization over the past 30 years. Between 1951 and 1971, the number of farms reporting dairy cows declined by over 70 per cent. Between 1971 and 1979, the number of dairy farmers declined by 8.6 per cent per year, with an accelerated rate of 11.1 per cent in the second half of the decade. This rapid rate of adjustment has been caused by a steady improvement in milk production technology (milk yields per cow increased by around 16 per cent and average herd size by almost 60 per cent during the 1970s), and increased competition among dairy farmers for a diminishing national market.

- The sketchy information that is available on farm income indicates that both the absolute levels of income and return to resources in dairy farming are lower than for other farm commodity groups. This is, perhaps, surprising given the relatively large direct federal subsidy payments on industrial milk and the income transfers made through the market that accrue to the dairy farm sector. However, digging further, this modest level of income is understandable. Dairy farms are, relative to other farm types, predominantly small business units. And because of the demands of twice-daily milking every day of the year, off-farm sources of income account for a much smaller proportion of dairy farmers' total net income than for farmers as a whole, and dairy farmers are only half as likely to engage in off-farm employment as other farm operators. Their operations are also more labour intensive than any other types of farms in Canada. However, modest though dairy farmers' incomes may be, they are relatively more stable than incomes in other farm sectors.

- The productivity of dairy farms in North America vis-à-vis other countries, such as New Zealand and Australia, is low. The Canadian industry appears to compare unfavourably with that of the United States. Milk yield per cow in Canada is 15 per cent lower than in the United States. Information drawn from the Ontario Dairy Farm Accounting Project[2] suggests that, in 1977: average dairy herd size in northern U.S. states was over 60 per cent higher than that in Ontario (and Ontario has the highest average herd size of any province in Canada); Ontario dairy farmers had much larger investments per man and per cow; investment per hundredweight of milk sold was two to three times that of the three comparison U.S. states; and productivity per man and per cow was substantially higher in the neighbouring U.S. states compared with Ontario. These results must be interpreted with caution as it is uncertain whether the two farm samples were strictly comparable. However, research undertaken by Agriculture Canada also shows that productivity performance in Canada at the dairy production level lags behind that in the United States.[3] Canadian dairy farmers could substantially improve their productivity by improving their current management practices; it is estimated that the national average milk yield per cow could be increased by almost 40 per cent through improved feeding methods, reduced calving intervals, and greater use of artificial insemination services in the dairy herd.[4]

Problems

There have been endemic problems in the dairy sector that have generated public policy responses over the past 50 years. Chief among these are:

- low and unstable returns to dairy producers on, typically, small-scale production units;

- a high rate of structural adjustment at the production level, which has caused considerable economic and social disruption, particularly in some

regions where farm and nonfarm alternatives to dairy farming were few;

- wide disparities in bargaining power between milk producers and milk processors;
- inequities in returns among producers resulting from unequal access to local milk supply contracts; and
- inefficiencies in the milk marketing system through, for example, overlaps in raw milk assembly routes and a plethora of small milk processing plants unable to achieve economies of scale.

Policy Responses

Economic intervention and regulation in the dairy sector extends back over half a century and, for a full generation, dairy producers have worked within an extensively regulated system.

Both federal and provincial governments have used a wide range of policy instruments to address the problems of the sector. The most consistent aim of these interventions has been to increase the incomes of dairy producers. This has been done by three main measures: direct subsidies, indirect income transfers from consumers effected by price support and supply control programs, and barriers to the movement of milk and dairy products across the national frontier and, for fluid milk, across provincial boundaries also.

Provincial governments have given provincial milk boards and agencies broad powers to control the production and marketing of milk within provincial boundaries. Provincial governments and boards operate autonomous policies for fluid milk with scope for considerable producer input to their design and operation. The federal government has jurisdiction over manufacturing milk policy but, in practice, the programs for industrial milk are operated jointly by federal and provincial governments and the provincial milk producers' boards.

Fluid Milk Policy

Fluid milk policy in Canada has a long history.[5] Prior to 1933, the prices paid to producers for milk supplied for fluid consumption generally were negotiated between producers and distributors. However, during the Depression, the prices paid for milk used for manufacturing declined and farmers who supplied milk for this purpose tried to secure a higher price by offering milk to the fluid trade at prices lower than those specified in the voluntarily negotiated agreements between the regular fluid producers and distributors. The result was that fluid prices fell drastically and the voluntary agreements on price became unenforceable. In these circumstances, the producers appealed to their provincial governments to set prices to producers and consumers, to control the number of distributors, and to exercise general supervisory powers.

These appeals, reinforced by considerable concern about maintaining the quality of milk, led several provinces to pass legislation setting up government milk control boards. The provincial governments took this step with the expectation that the problems were temporary and that the need for price regulation would disappear with the Depression. They therefore looked upon government intervention as something that was justified because of an emergency situation. In point of fact, the boards have remained and their powers have been extended.

Currently, producer marketing boards (or commissions), which are supervised by provincial statutory regulatory agencies, regulate the marketing of fluid milk in all provinces except Newfoundland.

The objectives of the provincial governments and milk boards are self-sufficiency in fluid milk supplies, year-round continuity of supply, seasonal price stability, adequacy of returns to producers, and interproducer equity in prices received for milk of given quality. The boards control participation in the fluid milk market and restrict output by operating licensing and supply control programs, establish fluid milk prices by using formulas, and discriminate in the end-use pricing of their product. (For example, in most provinces, the fluid milk price is higher than the price of milk of identical quality sold for manufacturing.) Imports of fluid milk from the United States are banned and, with the acquiescence of the federal government, interprovincial trade in fluid milk is virtually precluded by complex administrative procedures. There is no economic or health safety rationale for provincial self-sufficiency in fluid milk as, technically and economically, the product can be moved long distances between markets without loss of quality. In effect, the producer boards and/or regulatory agencies in each province operate local monopolies for fluid milk. No direct subsidies are paid to Canadian fluid milk producers.

Manufacturing Milk Policy

Federal government subsidies on cheese and butter were initiated in 1935 to provide emergency support and a measure of stability to dairy producers' income. The subsidies were removed in 1937 but then reintroduced in the early 1940s to maintain milk production and to keep down consumer prices for dairy products during the war years. In 1944, the federal Agricultural Prices Support Act was passed as a temporary measure to prevent a repeat of the depressed price period that followed World War I. For dairy, the support provided under this legislation was

largely in the form of "offer to purchase" programs for butter, skim milk powder and, to a much lesser extent, cheese. There were export programs to dispose of products purchased under these programs, as well as import restrictions and tariffs on dairy products.

With the promulgation of the Agricultural Stabilization Act in 1958, the responsibility for providing support for dairy products (and other agricultural commodities) was transferred to the Agricultural Stabilization Board. Support for dairy producers increased sharply and direct subsidies to industrial milk producers became a *regular* feature of dairy policy. These subsidies were in addition to support purchases, export subsidies, and trade controls.

Intensive lobbying by dairy farmers in the early 1960s for a national authority to regulate the marketing of industrial milk culminated in the establishment of the Canadian Dairy Commission (CDC) in 1967. The stated objectives of the CDC are:

> . . . to provide *efficient* producers of milk and cream with the *opportunities* of obtaining a *fair* return for their labour and investment and to provide consumers of dairy products with a continuous and adequate supply of products of high quality.[6]

Conspicuous by their absence are definitions of "efficient" and "fair" and any mention of the level of prices consumers must pay for a continuous and adequate supply of quality dairy products.

Although earlier policies had provided support purchase prices for butter, skim milk powder, and cheese, with irregular subsidy or deficiency payments being made, the level of direct subsidy payments for industrial milk and cream increased substantially after 1967. However, to discourage excessive production and to limit the total amount of subsidy payments, a system of individual subsidy eligibility quotas was introduced and a "hold-back" charge was deducted from the subsidy payments to be used for subsidizing the export of surplus dairy products.

In 1975, the federal government established the "long-term dairy policy." This policy reaffirmed the commitment to a high level of self-sufficiency in manufactured dairy products. However, a reduction in the long-run level of self-sufficiency was envisioned at the time insofar as imports of manufactured dairy products were to grow to not less than 10 per cent of total requirements over the next several (not defined) years.[7] This component of the policy has not been implemented. At present, domestic manufacturing milk production is set at a level sufficient to supply all the Canadian demand for butter fat at the CDC's support price. The market share quota (MSQ) is the instrument for balancing domestic supply and demand. Each province is allotted a share of the national market, and within a province each producer is assigned an individual quota for industrial milk. The aggregation of individual dairy producers' MSQ's corresponds, of course, to the province's allotment.

The price paid to producers for industrial milk is determined by a "returns adjustment formula." This formula incorporates changes in consumer prices, input costs, and a judgment factor to determine the annual "target return" on industrial milk. The base period price was set at $25.00 per hectolitre of milk on April 1, 1975. The government uses two tools to ensure that producers can approximate the annual target price indicated by the formula for milk their boards sell to processors. These are a direct subsidy and support purchases of butter, skim milk powder, and cheddar cheese. Since 1975, the direct subsidy has remained at $2.66 per 100 pounds of milk. This reflects federal government policy to reduce the real value of the direct subsidy over time and to shift the costs of present programs increasingly towards milk product consumers. That is, increases in target returns have come from continued increases in the market prices for butter and skim milk powder.

The butter support price has been kept relatively low in an attempt to sustain the quantity of product demanded and, thereby maintain the size of total MSQ's. For every 4 pounds of butter that is produced from one hundredweight of milk, there is approximately 8 pounds of skim milk powder produced (as a joint product). At the present support price level for skim milk powder, there are substantial quantities of this product that are surplus to domestic requirements. Surplus powder is exported at prices well below the prevailing Canadian support price (and the resource costs of its production). A levy deducted from producers' subsidy payments covers a large percentage of the accounting costs of this export disposal program.

An important element of the "long-term dairy policy" is the avoidance of "surpluses" – that is, production above national requirements at the regulated prices of milk products. This is why supply is controlled. Indeed, the supply management program for industrial milk (unlike those for fluid milk and poultry) does not hold output below its equilibrium level, but rather is designed to limit the quantity of milk that is produced in response to the incentive prices provided to Canadian industrial milk producers by the formula pricing system. A committee – the Canadian Milk Supply Management Committee (CMSMC), formed from representatives of provincial governments, provincial milk marketing boards, the CDC and Canadian dairy farmers (through their national organization, the Dairy Farmers of Canada) –

is charged with managing industrial milk supply. After estimating domestic consumption at the regulated market price, the CMSMC recommends a total level of MSQ and determines its allocation among the provinces. To further deter excess production, a system of differential prices or penalties is used. About 95 per cent of an individual producer's MSQ is eligible for the supported price and the full direct subsidy. The remaining 5 per cent (termed "sleeve" production) does not attract the direct subsidy and, more importantly, any production in excess of an individual industrial milk producer's MSQ bears a very large over-quota penalty.

The rules and regulations governing the transfer of MSQ's between producers varies from province to province, ranging from a fairly free market in some provinces to a system in others where a producer's unused quota reverts to the provincial marketing board and is then administratively allocated to other producers in the same province. The national scheme does not allow interprovincial trade in milk quota, although in theory adjustments can be made in interprovincial shares of total industrial milk production.

A *sine qua non* for the effective operation of the national program for industrial milk is control of the supply of lower-priced imported dairy products. Since 1951, there have been quantitative import controls on all dairy products. The CDC itself has exclusive responsibility for butter imports and normally imports none. Thus, effectively, at present, there is an embargo on butter imports and annual cheese imports are restricted by licensing to 45 million pounds.[8]

Regulation Results

Current federal manufacturing milk policy has some favourable features. Desirable resource adjustments in milk production and processing are taking place, but at a rate that is more socially tolerable than the wholesale exit which, it is alleged, would occur without the current support policy. The policy does not subsidize an unlimited quantity of output in contrast, for example, to the more open-ended subsidization of milk production in the European Economic Community. (The direct subsidy is paid on only 44.1 million hectolitres or 100 million hundredweights, and the over-quota levy of $18.6 per hectolitre or $8 per hundredweight provides a stiff penalty to individual producers who exceed their quota allotment.) Although diminishing in real terms, a significant part of the income transferred to industrial milk producers is in the form of a direct subsidy borne by taxpayers, and this is a progressive and an open mean of redistributing income.

Additionally, much can be said in favour of provincial milk boards in respect of their marketing of both fluid and industrial milk. By any measure, they have achieved their objective of increasing the bargaining power of milk producers in the market place and, specifically, in their commercial dealings with milk transporters and milk processors. The boards have made major contributions towards removing the previously large inequities among producers and in stabilizing the net incomes of dairy farmers. Consumers have had a stable supply of quality milk products available to them at all times. In many provinces, the boards have had a positive impact on the efficiency of milk handling, notably through the rationalization of assembly routes. Similarly, they have encouraged efficiencies in milk production through sponsoring research and providing production advice and farm management counselling to dairy farmers. Most boards have, through their product promotion activities, played an important role in educating the consumer as to the nutritional importance of fluid milk and manufactured dairy products, and may have slowed the decline in dairy product consumption.

These favourable features of federal and provincial dairy industry regulation are, however, in the opinion of the authors, overwhelmed by the substantial costs associated with the operation of current dairy programs. Analytical evidence presented in two research papers by Barichello and by Josling, which were commissioned for this study[9], shows that both fluid milk and manufacturing milk programs in Canada entail large transfers of income from consumers and taxpayers to milk producers and, to a lesser extent, to dairy processors and foreign consumers. Furthermore, the income transfers entail substantial losses in social welfare.

Before reviewing this research material, it is appropriate to emphasize that national and international markets for milk and dairy products have been so thoroughly distorted for so long that any empirical investigation of the costs and benefits of current Canadian dairy policies, and of alternatives to them, necessarily entails heroic assumptions, and "real" data are fugitive and inadequate.[10] Accordingly, the data presented in this section should be regarded as "best estimates," and the specific figures on income transfers and welfare losses illustrate orders of magnitude. However, confidence in them is enhanced by the fact that the two authors, working independently, and using different analytical approaches, arrive at figures on the aggregate efficiency losses and income redistributions associated with current dairy policies that are quite similar.[11] Furthermore, the results proved to be robust to changes in assumptions about elasticities and other important parame-

ters relating to world prices for dairy products and the costs of milk production.

Table 7-1 shows Barichello's estimates of the static welfare costs and income transfers in 1980 attributable to regulation in both the fluid milk and industrial milk markets in Canada. Taxpayers fund regulation of the industrial milk market to the tune of around $300 million per year in paying the direct subsidy to producers and the administrative and some marketing costs of the regulatory programs. Consumers of fluid and industrial milk products, by paying higher prices for fresh milk and dairy products and consuming less than would be the case in an unregulated market, suffer an income transfer estimated at close to $700 million per year. This enormous combined transfer from taxpayers and consumers, about $1 billion per year, is composed of about $700 million in transfers associated with the federal industrial milk policy and just under $300 million from fluid milk market regulation.

In return for this taxpayer and consumer cost (and for the welfare losses suffered by the national economy), the present industrial and fluid milk programs are estimated to benefit established dairy farmers with an aggregate gross income transfer of almost $700 million. Dairy processors also share in the program benefits as the industrial milk processing industry is substantially larger than would exist in an unregulated market.[12] The other major beneficiaries are overseas consumers of exported Canadian skim milk products. They purchase these products at prices that are substantially below those charged to Canadian consumers, and below the costs of their production in Canada.

A further income transfer results from present regulation in the dairy sector. This is the payment that must be made by farmers wishing to enter dairy production, or expand their dairy enterprise, to the original recipients of the quota "rights" (MSQ for industrial milk and fluid milk quota). As a consequence of this intergenerational income transfer among producers, many of the income gains transferred by the regulatory programs to producers are captured in perpetuity by the seller. The buyer incurs an equal and offsetting cost, and in doing so, loses most of the future benefits of the regulatory programs. Barichello estimates the long-run transfer from sellers to buyers to be over $250 million a year for industrial milk and around $175 million a year for fluid milk.[13]

The use of the range of instruments (outlined earlier) to regulate the dairy industry distorts the flow of resources to and within the industry and the consumption of dairy products, to such an extent that a national welfare (or productivity) loss of over $200 million a year ($178 million for industrial milk and $30 million for fluid milk) is incurred. This is a minimum figure. For industrial milk, account is taken of the welfare costs associated with the reduction in consumption of milk products from the level that would prevail with free trade in these products; the domestic production of more milk than would be the case under an open border policy; the diversion of skim milk products from the domestic to the export market; and the resources which are used in actually operating the regulatory program. But account is *not* taken of the welfare costs that arise from the distortions in the location of production both between and within provinces as a result of inflexibilities in the market share quota program; the reductions in opportunities and incentives in the industry because of pervasive regulation; the impact of quota controls on size-related technological improvements; and distortions at the milk processing, distribution and retailing levels that emanate from industry regulation. For fluid milk, account is taken only of the welfare costs associated with the milk consumption which is foregone because of the higher prices which prevail in a regulated vis-à-vis an unregulated market and the

Table 7-1

Welfare Costs and Income Transfers Due to Regulation in the Fluid Milk and Industrial Milk Markets, Canada, 1980

	Static welfare costs	Income transfers		
		Milk producers	Milk product consumers	Taxpayers
	(Millions of dollars)			
Fluid milk	-30	250	-280	
Industrial milk	-178	420	-406	-303
Total	-208	670	-686	-303

SOURCE Richard R. Barichello, "The Economics of Canadian Dairy Industry Regulation," Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy, Technical Report E/I 2, Ottawa, 1981 Tables 3, 4, and 7.

administrative costs of managing the regulated system. But account is *not* taken of the welfare costs that arise from the balkanization of domestic production and the prohibition of trade in fluid milk across the border with the United States. In short, because many of the distortions of present regulations are unmeasured, the total welfare costs of regulation in the dairy sector are very probably higher than the estimate of $200 million per year reported here.

Barichello's conclusion that present regulation of Canada's dairy industry is costly in terms of national income foregone and involves massive income transfers to existing dairy producers from taxpayers, consumers of dairy products, and future dairy producers is not new; it has been well documented by earlier economic policy researchers.[14]

The second research paper commissioned for this study, that by Josling,[15] also serves to support the quantitative estimates of transfers and welfare costs reported above. Although different analytical procedures are used in the Josling study, the income transfer and welfare cost estimates are of similar orders of magnitude. Thus, for 1978-79, the producer income transfer is estimated by Josling at $905 million, and the consumer transfer at $623 million (compared with $670 million and $686 million, respectively, in the Barichello study). With a supply elasticity of 0.5, Josling puts the welfare cost at $275 million per year averaged over the 1976-79 period (compared with Barichello's estimate of $208 million).

Despite what are obviously huge, year-after-year income transfers and welfare costs, there has been very mixed success in attaining the five major goals of dairy policy in Canada[16] – that is, to increase the incomes of dairy farmers, maintain the size of the dairy industry, procure price stability for producers and consumers, provide adequate year-round supplies of high quality dairy products at reasonable real price levels, and treat all dairy farmers equitably, regardless of circumstances or region.

The goal of raising dairy farmers' incomes appears to be incompletely and temporarily met by the present dairy program. The dramatic milk price increases beginning in the 1972-75 period appear to have briefly raised dairy farm incomes, but these income gains have accrued mainly to the larger producers, particularly those who owned dairy farms when these price increases occurred. The many small dairy farmers have enjoyed only a small share of the program benefits – the smallest two-thirds receive about 15 per cent of the benefits – and the exit of these farmers from milk production continues unabated.

The income gains enjoyed by dairy farmers soon become translated into capital gains, raising the wealth of those who held land and quota in the early to mid-1970s and leaving subsequent entrants to dairy farming little better off than dairy farmers were before the program began, and with a higher cost structure to offset the increased milk prices. Consequently, the bulk of the program benefits are in the form of capital gains on quota and land holdings and they have accrued mostly to those larger dairy farmers who were already producing milk in the early 1970s.

The goal of maintaining the volume of industrial milk production is slowly being frustrated by a long-term decline in domestic per capita butterfat consumption, exacerbated by steadily rising consumer prices. To be sure, this declining market is now being largely supplied by domestically produced milk products, but this self-sufficiency entails very large annual costs to Canadian society.

Quality milk products are being supplied to consumers, but this does not stem from the economic regulation of the industry, and the variety of products available to consumers is narrower than what would be found in a less regulated environment.[17] Milk products themselves are sold to consumers at prices that are much higher than competitive world prices. In fact, dairy product prices are established with no apparent reference to the interests of consumers and can be described as "reasonable" only from a producer perspective.

So long as industrial milk policy is applied uniformly to dairy producers in all provinces and producers receive approximately the same price for each unit of milk irrespective of location of production, the goal of achieving equity among producers is being achieved. However, the program discriminates against the more efficient producers in provinces where MSQ is allocated on the basis of past milk output, and against new and expanding milk producers who must pay substantial sums to buy the "right" to sell fluid and/or industrial milk from those dairy farmers who were given quota free of charge.

Finally, three other specific negative features of current dairy policy deserve attention.

First, the federal program for industrial milk and the provincial programs for fluid milk are the epitome of bad international and national trade practices. For industrial milk products, there is a virtual embargo on the importation of butter; there are quantitative restrictions on cheese imports; and Canadian dairy products – largely skim milk powder and evaporated milk – are dumped on world markets at prices well below the national price and the cost of their production. For fluid milk, foreign (U.S.) imports are precluded and there is virtually no interprovincial trade.

These practices are contrary to Canada's avowed policy of promoting freer international trade in farm and food products and maintaining the integrity of the Canadian common market.

Second, the base price, established in 1975, was set at a level that was too high relative to the costs of industrial milk production.[18] Subsequently, the pricing formula has been too generous in establishing current-year prices, as is evidenced by the values that are attached to marketing quotas in provinces where MSQ can be traded. The federal Minister of Agriculture has recognized the general link between the value of quotas and price levels:

> Quota prices are high only because farmers are willing to pay those high prices. Farmers are paying very high prices for quota because, on current market conditions, they expect that they can recover their large investments and still make a profit further down the road. Quota prices therefore act as a barometer for the profitability of the industry... High quota prices are an indication that average returns have become relatively high – that the (pricing) formula has been too generous in setting prices.[19]

The Minister has also put his finger on another deficiency – namely, that the returns adjustment formula does not really measure changes in the cost of producing milk but only passes on increases in the prices of inputs. He has properly suggested that consumers as well as producers should be the beneficiaries of productivity improvements in the dairy industry through the insertion of a productivity factor in the industrial milk pricing formula.[20]

The issue of escalating quota values is particularly pertinent to the fluid milk production subsector in some provinces. For example, in British Columbia, fluid milk quota was trading for $173 per pound per day (over $380 per hectolitre) in December 1980 – a price level that is indicative of the economic rents accruing to the original holders of quotas.[21] To place this figure in perspective, at this level of quota value a prospective dairy farmer must pay out at least $300,000 to buy the "right" to sell milk from a 50-cow dairy herd, before he or she has purchased any land, buildings, equipment, or cows. As was pointed out earlier, this represents an enormous additional financial barrier to would-be entrants into dairy farming and a permanent cost burden thereafter. In Ontario, which has the lowest fluid milk price, fluid milk quota was pegged at $16 per pound per day by the Ontario Milk Marketing Board until 1979. Subsequently, an auction market for milk quota was introduced and, by the first quarter of 1981, the price of fluid milk quota had increased to over $40 per pound per day.

Third, supply management programs for fluid and industrial milk are inherently inflationary and regressive. Lower-income consumers provide proportionately more of the income transferred to dairy producers than do higher-income consumers, and for industrial milk this differential is growing as the real value of the direct subsidy decreases and greater weight is placed on support purchases.[22] Sadly also, the distortions in consumption patterns for dairy products that arise from the program are not in the best nutritional interests of consumers. Butter prices are relatively lower and skim milk powder prices higher than would be the case in an unregulated market. Generally, Canadian diets have a surfeit of fat (butter is virtually pure fat) but are relatively low in calcium and vitamin D, two elements that are plentiful in skim milk products.

Policy Alternatives

Federal and provincial policy for milk in Canada is a case study of costly and cost-ineffective economic regulation. A primary intent of the policy is to transfer income from milk product consumers and from taxpayers to dairy farmers. This it does – fluid and industrial milk producers are estimated to receive gross benefits of well over $600 million per year – but at considerable cost to other groups in society and to Canada as a whole. Consumers and taxpayers together appear to lose almost $1 billion a year. The static welfare costs to the nation are over $200 million – that is, for every $1 that producers receive in additional gross income, there is an estimated loss in social welfare of over 30 cents.

The range of policy changes and alternatives that could be considered are legion. The most draconian measure would involve moving to an unregulated market for both industrial and fluid milk – the supply management program would be dismantled, price supports for dairy products removed, the direct subsidy payment rescinded, and trade controls taken off. Contrary to the belief of many dairy industry participants, this move would not result in the disappearance of the dairy industry in Canada, although it would certainly decrease from its present size.

Barichello has estimated the impact of moving to an unregulated market for both fluid and industrial milk, with no border restrictions, vis-à-vis the present system of regulation (alternative 1, Table 7-2). This is not, of course, a serious policy option, not the least because of its political infeasibility. However, it provides insight into the economic impact of moving in that direction if not to that actual destination. National income could potentially increase by $200 million per year through the avoidance of present welfare losses, taxpayers would save about $300

Table 7-2

Summary of the Effects of Six Alternative Policies Compared with the Present System of Regulation, Canada, 1980

	Increase (+) or decrease (-) in:			
	Welfare costs	Producer transfer	Consumer transfer	Taxpayer transfer
	(Millions of dollars)			
Policy alternative:				
1) Unregulated market for both fluid and industrial milk	-208	-671	+686	+303
2) Retain foreign trade controls; remove domestic controls	-143	-560	+391	+303
2a) Remove only industrial milk domestic controls	-112	-310	+111	+303
3) Abandon pricing formula; price milk so MSQ value equals zero by lowering direct subsidy	0	-256	0	+256
4) Domestic requirements defined in terms of nonfat solids, not butterfat	-80	+64	0	+174
5) Remove price supports; raise direct subsidy to compensate	-104	+100	+183	-231
5a) Only raise subsidy to generate present *net* milk price	-104	0	+183	-131
6) Remove direct subsidy; raise price supports to compensate	+45	+20	-68	+280

SOURCE Barichello, "The Economics of Canadian Dairy Industry Regulation," Tables 3, 4, and 7.

million, and consumers would enjoy an annual income transfer gain of almost $700 million. Producers would experience an annual gross income loss of around $670 million, offset to some extent by the avoidance of the levies on industrial milk now paid by producers to finance the sale abroad of surplus skim milk powder. The dairy industry in Canada would contract to about 70 per cent of its current size.

Five further policy alternatives (alternatives 2 to 5) are presented by Barichello and their estimated impacts vis-à-vis the present system of regulation are summarized in Table 7-2. The five encompass:

- removing domestic regulation but retaining import controls for industrial and fluid milk (alternative 2), and a variant of this alternative involving the abandonment of domestic regulation for industrial milk but retaining current regulatory programs for fluid milk (alternative 2a);
- abandoning the pricing formula for industrial milk and setting the farm gate price of industrial milk such that the value of MSQ tends to zero by varying the value of the direct subsidy (alternative 3);
- defining domestic industrial milk requirements in terms of nonfat milk solids rather than butterfat (alternative 4);
- removing the direct subsidy on industrial milk but raising price supports for butter and skim milk powder to provide producers with the present target returns price (alternative 5); and
- removing the price supports on butter and skim milk powder but providing producers with the present target returns price by raising the direct subsidy on industrial milk (alternative 6).

Alternative 2 involves moving to an unregulated domestic market for both industrial and fluid milk but, unlike the "free trade plus no subsidization" policy option (alternative 1), this policy scenario maintains the present restrictions on the importation of fresh milk and dairy products into Canada. Under this alternative, it is estimated that the farm price for milk would decline by 25 per cent from current levels, and industrial milk production would fall by about 7 per cent. The national annual welfare losses associated with the dairy program would be reduced by over $140 million compared with the present system of regulation. Consumers and taxpayers would benefit by almost $400 million and $300 million, respectively, but milk producers in the aggregate would lose about $560 million in gross income. Clearly, the farm income of dairy farmers would plummet in the short run, although the impact would be less traumatic

than if trade barriers were removed also (see alternative 1). And, although many producers would exit the industry, total milk production would fall by only 4 or 5 per cent. Barriers to entry or expansion for dairy producers would be removed as present quota restrictions would not be operative. If current regulation of the fluid milk market was maintained and only the industrial milk market was deregulated (alternative 2a), there would still be significant but less marked gains for consumers and taxpayers, welfare losses would be reduced but less so, and there would be a much smaller reduction in producer gross income than under alternative 2.

In policy alternative 3, the impact of abandoning the pricing formula for industrial milk and substituting a system whereby price is established so as to keep the value of MSQ close to zero is explored. Industrial milk price changes would be effected by changing the value of the direct subsidy, while price supports for butter and skim milk powder would be retained at current levels. Pricing by this mechanism, at 1980 levels of quota values, would lead to a decline in the net farm gate price of close to 20 per cent (from $31 to $25 per hectolitre) through the virtual elimination of the direct subsidy (declining from $6.04 per hectolitre to 24 cents per hectolitre). There would be no net change in aggregate welfare losses compared with the present policy system and consumers' well-being would be unchanged – but there would be a transfer of income from milk producers to taxpayers of about $250 million per year. As quota values would be close to zero, barriers to entry to industrial milk production would be virtually eliminated.

Alternative 4, under which domestic industrial milk requirements are defined in terms of milk solids rather than butterfat, is a policy alternative that has received attention in several previous research studies.[23] At its simplest, it entails cutting back industrial milk production to the point where domestic requirements for milk solids are satisfied at prevailing support prices for skim milk products and making up the shortfall in butterfat consumption requirements at current support prices by importing butter from off-shore sources. Substantial efficiency gains would accrue because resources would not be used wastefully to produce milk products that have to be sold abroad at uneconomic prices. Industrial milk production would fall by about 30 per cent. Net producer milk price for the reduced quantity of industrial milk would increase as there would be no surplus disposal levy, and product support prices and direct subsidy levels would remain unchanged. However, the effect of increasing net milk prices while reducing the quantity of MSQ in the system would cause the price of MSQ to increase substantially. Barichello estimates that, compared with the existing dairy program, under alternative 4, national welfare losses would be reduced by $80 million per year, and taxpayers would gain about $170 million a year by replacing their present contribution to dairy industry support with the profits that would accrue from importing butter at world prices and selling it at the higher domestic support price.

In policy alternative 5, the price support system for butter and skim milk powder would be removed, internal domestic market forces would determine the market price of butterfat and nonfat solids for the current level of milk output, but the "target" level of returns to industrial milk producers would be maintained at the present level by increasing the direct subsidy. Skim milk powder prices would decline to less than 60 per cent of the current level, and the direct subsidy would have to almost double (to close to $12 per hectolitre) to maintain the existing farm gate price to producers. National welfare losses would be reduced by about $100 million compared with the present regulatory system, largely through the elimination of the costs associated with nonfat solids surplus disposal programs. Producers gain over $100 million from the elimination of the within-quota levy. Consumers would enjoy a gain of over $180 million a year. But, under this policy alternative, taxpayers would pay well over $200 million a year more than the $300 million that they are now paying under present dairy policy.

A variant, 5a, of alternative 5, which could be used to limit the taxpayer's financial obligation, would be to increase the direct subsidy only to the point where the price for industrial milk received by the producer was equal to the target price less the within-quota levy (that is, to leave the net farm price for industrial milk at current levels). This variation would cost taxpayers an additional $130 million compared with current regulation (versus over $200 million extra under alternative 5), and would have the advantage that the producer price for industrial milk would be unchanged and, therefore, MSQ prices would remain at their present level.

Policy alternatives 5 and 5a have an important disadvantage for producers. The financial burden of the policy would be shifted fully onto taxpayers and the Treasury and the full costs of regulation would be made explicit rather than, as at present, being half hidden in the market price support arrangements effected through trade barriers and the CDC's support purchase programs.

The polar extreme to removing price supports and raising the direct subsidy to producers would be to remove the direct subsidy entirely and raise price supports to achieve the current level of "target"

returns for industrial milk producers (alternative 6). If it is assumed that support prices for butter and skim milk powder would both be increased, and in the same proportion, then to achieve the existing "target" price without a direct subsidy component would entail increasing support prices for the two products by over 20 per cent. The quantity of industrial milk required to satisfy domestic butterfat requirements would fall by as much as 25 per cent as butter consumption declined. This policy alternative is an attractive option only to taxpayers, who would save $200 million a year through the elimination of the direct subsidy. National welfare losses would increase by around $45 million a year compared with the present system. Consumers would incur an additional income transfer loss of almost $70 million a year. Losses to consumers and new entrants, and the social cost of dairy industry regulation would be completely hidden, which is not an appealing direction for dairy policy to take.

These six alternatives to the present system of regulation for the dairy sector range from a policy option that requires a fundamental change in policy direction (alternative 1) to options that entail alternative mixes of existing policy instruments (alternatives 5 and 6). Needless to say, a host of potential policies exist which lie somewhere between these two poles.

Conclusions

It would be naive to expect a radical transformation of the nature and shape of current dairy policy; political considerations militate against such a likelihood. When changes come, they will be incremental. However, current dairy policy is so costly and cost-ineffective that a reconsideration of the goals and instruments of economic regulation in this sector would seem urgent. The current review of long-term dairy policy comes at a propitious time.

In our view, there is no compelling reason why complete self-sufficiency in butterfat should be a cardinal goal of dairy policy. At present, it is only achieved at substantial cost to consumers, taxpayers, and to the nation overall. The stated intention in the 1975 "long-term dairy policy" was that the level of self-sufficiency should be reduced over time. This goal has been subsequently ignored. It should be revived. Greater reliance on world markets to provide a higher proportion of the dairy products consumed in Canada might entail acceptance of greater variation in product price. Supply security would not be a problem, however. There has been an overabundance of dairy products on world markets for decades, and no fundamental change in this situation is in the offing. Furthermore, genuinely efficient foreign producers such as New Zealand and Australia would have the capacity to expand output if they were provided with improved and assured access to the Canadian market, and New Zealand's access to the European butter market is almost certain to be further constrained in the future. Long-term contracts with overseas suppliers for part of our butterfat requirements is an alternative that would provide major benefits to taxpayers and the nation (see alternative 4, Table 7-2) and it should be explored.

A reduction in the degree of butterfat self-sufficiency in Canada is synonymous with a reduction in the size of both the production and processing levels of the sector. Historically, it has been argued that many dairy farmers have few, if any, alternative employment opportunities. This argument has been much overstated. Recent research has shown that dairy farmers (in Ontario and Quebec) are much more mobile in their employment opportunities than had been previously thought.[24] However, adjustment assistance might be provided to help producers and processors exit the industry and to help increase the productivity of those industry participants who remain.

The present drift in federal government dairy policy to decrease the real value of the direct subsidy in dairy income support and increase support prices for manufactured milk products should be reconsidered. Alternatives 5 and 5a suggest that the reverse – increasing the direct subsidy and lowering price supports – is a substantially more efficient method of transferring income to industrial milk producers.

Much of the cost of current dairy policy could be avoided – without changing its structure – simply by lowering real milk prices. Hence, even if the elements of dairy regulation were left intact, at a very minimum, the present mechanisms for pricing both industrial and fluid milk should be re-examined. It is clear that, as now practised, establishing prices on a formula basis yields a level of return that many dairy farmers believe is substantially above the cost of producing milk. As in the poultry sector, there are three major steps that should be taken to change current industrial and fluid milk pricing procedures. The first is to reset the bases upon which formula pricing decisions are made. For industrial milk, the base price was set arbitrarily in 1975 at a level too high to reflect the reasonable costs of producing milk on efficient operations, and thereafter current-year prices have been generated by the returns adjustment formula without much heed being given to the results that emerged. The same holds true for the pricing arrangements for fluid milk operated in most provinces. The second step is to include a productivity factor in the pricing formula's for both industrial and fluid milk so that consumers as well as producers can

share the benefits of increasing technological advances in milk production. The third and most important change to be made is to consider quota values in conjunction with the pricing formulas and use these values as an indicator of profitability in milk production. Formula prices are too high if quota values are high and rising – as they manifestly are – and prices to producers should be adjusted downward accordingly.

Changes should be made also in the process by which dairy policy is formed and in the ways present programs are regulated. In Chapter 13, issues relating to the composition of statutory regulatory agencies and their regulatory procedures are discussed and several recommendations are made. These recommendations hold also for industrial and fluid milk market regulation in Canada; they are as pertinent to the CDC[25] and the provincial regulatory agencies for milk as they are to the NFPMC and the provincial superboards that regulate other commodity subsystems.

It may be observed finally that the cost of dairy industry regulation would be lower if the productivity of Canada's dairy farmers was higher. Accordingly, more emphasis should be put on productivity enhancement in public policy towards the nation's dairy industry. To be sure, both federal and provincial governments already devote significant resources to such programs as herd testing, sire selection, artificial insemination, feeding practices, health improvement, and other aspects of milk production technology and dairy farm management. However, the annual expenditure on such programs is small relative to that of the costly income transfer programs described here. There is a real need in Canada for a reallocation of public resources between the large and continuing annual financial transfusions that subsidize dairy farmers' incomes and measures that, by raising their productivity, would reduce the burden that the income maintenance program for dairy farmers places on other Canadians. Furthermore, programs for and progress towards productivity improvement should be a more prominent feature of annual statements on, and periodic reviews of, Canada's dairy policy. The rest of Canadian society has a right to be assured that every effort is being made to minimize the costs of dairy industry regulation in the present and to greatly reduce them in the future. If this is not the objective and the expectation of Canada's federal and provincial governments and dairy producers' organizations, they should say so.

8 The Processed Fruit and Vegetable Sector: Tomatoes and Asparagus

There are over 30 producers' marketing boards for horticultural crops in Canada. They are most in evidence in Ontario, where there are 13 marketing boards, followed by British Columbia and Quebec, with 6 and 4 boards, respectively. Across the nation, their commodity coverage, powers and functions are diverse. This chapter focuses upon the activities of only two marketing boards in the province of Ontario and on only two commodities – tomatoes and asparagus for processing.[1] While the material presented here is quite specific and cannot claim to cover regulation in the entire horticultural industry, it illustrates the difficulties of using provincial marketing boards and heightened producer powers to solve basic structural and production problems in agriculture whose implications may be nation-wide.

The total farm value of commercially grown fruits and vegetables was about $700 million in 1979. Apples are the most important fruit crop, accounting for 40 per cent of farm fruit value, and about one-fifth enters the processing industry. Potatoes are the most important vegetable in terms of farm value, and one-third of that crop is processed. Tomatoes follow potatoes in importance and had a farm value of $70 million in 1979. Over two-thirds of this crop is processed. Asparagus is relatively much less important, with a farm value of $3.8 million in 1979.

The total value of shipments of the fruit and vegetable processing industry was $1.4 billion in 1979. There are about 200 fruit and vegetable processing establishments in Canada (down from 270 in 1970) employing around 13,000 individuals full-time and an additional 13,000 seasonal employees in the "peak" months of August and September. Ontario accounts for 60 per cent of the value of total shipments, followed in descending order by Quebec, the Atlantic provinces, British Columbia and the Prairie provinces. The industry is primarily a supplier to the domestic market, with exports accounting for only 8 per cent of output. Imports of processed fruits and vegetables (of which over half are temperate products which compete with local supply) account for approximately 25 per cent of domestic consumption.

In 1978, two task forces studied the food manufacturing and the processed fruit and vegetable industries.[2] One of the conclusions reached was that the powers of producers' marketing boards, particularly for fruits and vegetables, were being used in ways that jeopardized the development and the very viability of segments of the food processing industry in Canada. Manifestations of this situation included a decline in the balance of trade position for "basic" processed products and the low and declining profitability of processing basic vegetable products due, in part, to the fact that the prices of raw product were a significantly higher proportion of total costs than they were in competing countries, notably the United States.

Marketing boards for horticultural crops are, basically, of two types: boards that negotiate prices, terms, and conditions of sale on behalf of their grower members, and boards that have price-setting powers and/or act as an agent for growers through which all sales and payments are made (that is, they operate as a single selling desk agency). Typically, the boards control the produce that is sold for processing rather than that delivered to the fresh market. Marketing arrangements for processed fruits and vegetables have been sought by growers producing for this segment of the market rather than for the fresh market because of the greater problem of disparity in bargaining power between the many growers and the few processors of fruit and vegetable products.

Virtually all Canada's processing tomatoes are grown in Ontario. Over the past 20 years, production has increased by almost 50 per cent, yields per acre by 40 per cent, the number of growers has declined by 60 per cent, the average number of acres per grower has more than doubled, while total acreage in production has remained relatively static.

	1960-61 average	1978-79 average
Number of growers	3,626	1,500
Total acreage	22,208	23,555
Acres per grower	6.1	15.8
Production (in tons)	307,535	458,291
Tons per acre average yield	13.93	19.48

Approximately 30 firms, most of which are located in Ontario, manufacture tomato products in Canada. Their range of products includes whole canned tomatoes, juice, ketchup, crushed tomatoes, purée, sauce, soup, and tomato concentrate. The four leading firms accounted for over 70 per cent of total processed tomato deliveries in 1979. Canada is largely self-sufficient in juice and ketchup, but imports about 40 per cent of the canned whole tomatoes consumed and virtually all purée and paste requirements. Exports of tomato products are minimal. If all processed tomato product imports could be economically replaced by domestic production, this would require an additional 13,000 acres to be devoted to processing tomato production in Canada (that is, an increase on current acreage of about 50 per cent).

The acreage of asparagus grown in Canada has ranged between 3,000 and 4,000 acres, but both yield per acre and farm production in Canada have declined by over 20 per cent in the last 20 years.

	1960-61 average	1978-79 average
Bearing acres	3,740	3,569
Pounds per acre average yield	1,867	1,520
Production (in million pounds)	7.0	5.4

Ontario is the major asparagus producing province, and over the most recent five-year period Ontario's share of production averaged about 70 per cent of Canada's total output. The three other producing provinces are British Columbia, Quebec, and Manitoba. Since 1960, the proportion of Ontario's asparagus production sold for processing has ranged between 90 per cent in 1965 and 43 per cent in 1979. Since 1975, there has been a consistent decline in the proportion sold for processing from 71 per cent to 43 per cent. Over this period, fresh market prices for asparagus were, on average, 20 per cent higher than prices for processing asparagus.

Domestically grown asparagus accounts for close to one-third of total domestic disappearance of asparagus in Canada – the remaining two-thirds is imported from the United States (largely from the states of Washington, Oregon, and California). In recent years, the national market share of the domestically grown product for use in both the fresh and processing sectors has declined. Currently, the asparagus processing industry, which has its major base in British Columbia, imports around 75 per cent of its raw product requirements. British Columbia's share of the national asparagus pack has increased from less than 50 per cent in 1975 to 70 per cent in 1979. This expansion has been based, almost entirely, on the imported raw product. Ontario's share of the national pack has declined from 31 per cent in 1971 to 22 per cent in 1979. During the 1961-65 period, its share was close to 60 per cent.

Canadian processors of asparagus – mainly those in British Columbia – have developed a growing export market in the United Kingdom, Australia, and elsewhere for their canned product. Exports represented about 6 per cent of plant output during the 1960s but by 1979 this share had increased to 37 per cent. At the same time, the share of canned asparagus imports in domestic disappearance has remained relatively stable at just under 10 per cent of the domestic market. Asparagus imports and domestic products are, in fact, different commodities – most imports are from Taiwan and are of the white-stemmed variety whereas the Canadian product is entirely of the green spear variety.

Problems

Two enduring issues have been at the heart of public policies towards the tomato and asparagus industries: relative bargaining power in the marketing place between producers of the raw product and processor-buyers, and protection of domestic producers of raw and processed tomato and asparagus products from overseas competition.

Producers of tomatoes for processing in Ontario face a highly concentrated industry in which four processors account for 70 per cent of processed tomato purchases. Ontario asparagus growers sell to only three buyers. Growers of both products desire to increase their bargaining power so as to secure improved prices and better and more equitable terms and conditions of product sale.

The trade issue has three major elements. First, Canadian producers' returns are constantly under pressure from fair and sustained competition from imported products, which are produced in areas having strong comparative advantages for their tomato and asparagus production and processing

industries. For processed tomatoes, such countries include the United States, Mexico, Spain, and Portugal – countries with better natural conditions for production and, typically, lower labour costs. In addition, in the United States, superior technology is being used in both growing and processing, and tomato growers and processors achieve significant economies of scale in a better structured industry. For example, in California, the tomato production and processing season is twice as long as in Ontario, the average production unit is 20 times the size of that in Ontario, and virtually 100 per cent of the crop is mechanically harvested compared with only 20 per cent in Ontario. For processing asparagus, the major competitor to domestic raw product has been the United States, specifically product from Washington and California. Here, competitors' major advantages are less clear-cut. However, analysis shows that while Ontario asparagus yields declined through the 1960s and 1970s,[3] yields per acre in the two major asparagus-producing U.S. states remained either unchanged (in Washington where they were initially high) or actually increased (in California).

Second, producers' and processors' returns have been sporadically under pressure from unfair competition from imported products (especially tomato products) from certain countries. For example, the European Economic Community subsidizes the production, processing, and subsequent exporting of manufactured tomato products. Eastern European processed tomato products have been offered at prices that were believed to be below their costs of production in an effort to generate hard currency earnings. And there has been sporadic distress selling and even dumping of processed tomato products from countries such as Taiwan.

Third, until recently, most imported processed fruit and vegetable products were subject to specific duties that had been in effect for several years. Consequently, the effective rate of protection afforded the Canadian industry had been falling as unit prices climbed. Protection at the border was being eroded by inflation. Also, reaction times to charges of unfair competition were rather long. Growing inadequacies in trade and tariff policies for fruit and vegetable products were believed to be a factor constraining the growth of the processing sector, which was perceived to have the potential for providing savings in the food import bill through higher domestic output and to offer opportunities for contributing to national industrial strategy by adding value to basic food products produced in Canada. Yet the profitability of establishments producing basic processed vegetable products was both declining and at relatively low levels during the 1970s. As a result, there was (and still is) concern that the investment in plant and equipment needed if the industry is to expand in the future would not take place.

Finally, it may be noted of the tomato processing industry that market demand is increasing fastest for products based on tomato concentrate, little of which is produced in Canada.

Policy Responses

The policy response at the provincial level to redress the disparity in bargaining power between the many producers of fruits and vegetables and the few processors of these products has been to establish producer marketing boards for specific commodities and/or groups of commodities. The boards can negotiate on behalf of their grower members with processors on the strategic variables of price, terms and conditions of sale, and contract security.

The Ontario Vegetable Growers' Marketing Board (OVGMB) regulates and controls within Ontario the marketing of 12 processing vegetables, one of which is processing tomatoes. All growers of processing vegetables must register with the board and all processors must purchase their vegetables through the board, although a processor has a choice of suppliers. For tomatoes, the board negotiates with processors for a minimum price per ton for each of two product grades, the terms and conditions of the agreements signed by individual growers and processors (such as timing of payments to growers and of delivery of tomatoes to processors), and the level of any charges or expenses related to the production and marketing of the crop (for example, the price of plants supplied by processing companies). In the event that the board and the processors fail to agree in negotiations, independent and binding arbitration procedures are used to break the deadlock. Recently, the board has sought to extend its powers and to give existing producers further security. In 1979, the board appealed to the Ontario Farm Products Marketing Board (OFPMB) for price-setting powers. The OFPMB refused this request. Instead, a procedure for price negotiations was instituted in 1980 which forces an arbitrator to select either one of the two final offers made by the processors or the OVGMB, rather than to develop a compromise settlement. Three further measures have been introduced to improve the market position of growers: strengthened contract guarantees under which a grower has the option of claiming the right to a contract for two further years after a processor has given notice of contract termination; prorating of processors' total tomato requirements among existing growers in the event that their total requirements fall; and contracts

expressed in terms of tonnage *or* acreage so that the grower can now decide how many acres to plant to fulfil the quantity terms of the contract, rather than the acreage being stipulated by the processor, as was previously the case.

The Ontario Asparagus Growers' Marketing Board (OAGMB) has considerable powers over the production and sale of asparagus for processing. Prior to 1979, the board had price-negotiating powers for processing asparagus but, in 1979, the board was accorded price-setting powers by the OFPMB. All processing product must be offered for sale to the board and, subsequently, the supply available is allocated to processors at prices established by the board according to variety, class, or grade of product. The board deducts service charges for the marketing of asparagus before distributing revenues paid by the processors to the growers. Processing companies that grow their own asparagus must also declare their production to the board and this production is taken into account when the remaining supplies are allocated.

The policy response, at the federal level, to attenuate the competitive pressure of imported raw and processed fruit and vegetable products has had two main elements.[4] First, tariff levels were changed in 1979 from a specific to an *ad valorem* basis and, concomitantly, the level of tariff protection was increased. On the recommendation of the Tariff Board, tariffs on canned whole tomatoes and tomato paste were raised to 3 cents a pound but not less than an *ad valorem* rate of 20 per cent (from 2 cents a pound with no *ad valorem* limit), and to 13.6 per cent *ad valorem* (from 1.5 cent a pound with no *ad valorem* limit), respectively. The *ad valorem* rate on tomato juice was unchanged at 20 per cent. Similarly, a new tariff item was created in 1980 to be applied year-round for asparagus used for processing. The specific duty was set at 5 cents a pound but not less than a 15 per cent *ad valorem* rate. The application of the tariff applies equally to all regions of the country and to all times of the year. Processors can apply for drawback of duty on raw product that is processed and exported, and for remission of a proportion of the duty when domestic supplies of raw product are insufficient to meet processed asparagus demand in the Canadian market. However, this latter remission is made only if the processors' request receives the support of the appropriate growers' organization, and part of the duty remitted must be committed to a research fund. Second, a "fast-track" surcharge procedure has been introduced to reduce the time taken to put a tariff surcharge in place to combat the sporadically disruptive in-flows of produce sold at distressed or subsidized prices.

Regulation Results

Raw product prices for processing tomatoes have not increased in real terms over the past 20 years. Difficult though it is to make direct price comparisons with the United States because of differences in grading standards, shifting exchange rates, and changes in transportation costs, it appears that, over the period 1950-79, under the marketing arrangements that exist in Ontario, raw product prices were maintained at levels that were approximately 20 per cent higher than raw product prices in the United States. At the prices established, growing tomatoes for processing in Ontario has been a profitable business, even for smaller-scale, higher-cost producers. Indeed, the high returns in tomato production has permitted the existence of an industry with a high cost structure and technology relative to its major competitor, California. A vertical effect of the relatively high raw product prices is that processors, with the active support of growers, have had to seek higher tariff protection for processed tomato products.

Over the past decade, the real (deflated) price for processing asparagus has increased sharply, although nominal prices have been about 20 per cent below those for fresh asparagus. Ontario prices for fresh and processing asparagus appear to have been about 30 and 50 per cent higher respectively than corresponding prices in the United States over the 1950-79 period, although recently the differentials have been narrowing, particularly for processing asparagus. The OAGMB has been successful in protecting higher prices in Ontario by securing higher tariff protection for its grower members (the minimum *ad valorem* rate was increased from 10 to 15 per cent in 1980, as noted earlier). But, in large measure the tariff protects the Ontario grower sector at the expense of a processing industry that is primarily located in British Columbia.

A growing proportion of domestic production has been sold on the higher-priced fresh asparagus market in recent years and, as a result, imported raw asparagus has become more important as a source of supply for domestic asparagus processors. This situation has been exacerbated by the OAGMB's actions in that the board has failed to deliver contracted quantities of asparagus to processors as growers have sold greater proportions of their output on the fresh market. In effect, growers have had the advantage of a minimum price prior to harvesting while processors have not been able to rely on supplies despite written contracts.

Conclusions

The present collective bargaining powers of the OVGMB for processing tomatoes are entirely justified, for the structure of the processing industry is such that growers need to act collectively to improve their bargaining position when negotiating terms and conditions of product sale. But experience attests that the board does not need the price-setting powers it sought to provide growers with adequate prices and to ensure that growers benefit from domestic market expansion. Indeed processors should be reassured that these powers will not be given to the board so that they can make the capital investment decisions needed for a growing industry without the additional uncertainty resulting from possible changes in the structure of regulation and further shifts in market power.

The strengthening of trade safeguard provisions (such as the fast-track surcharge procedure) has been a necessary development also. On the other hand, the changes in the *level* of border support might now be reconsidered as the conditions that prevailed in the mid-1970s have changed radically. The current level of the Canadian dollar vis-à-vis the U.S. dollar already provides domestic growers with a substantial margin of protection from competition from U.S. products. Additionally, rising transportation costs for raw and processed products are working to the competitive advantage of local products sold in local markets.

The issue of tariff protection is especially pertinent to the future development of a tomato paste industry in Ontario. Investment in such an industry appears to be unattractive at current Ontario raw product price levels. This is why a tariff on imported paste has been introduced, and it is understood that capital subsidies for plant construction are being contemplated. It can be questioned whether the tariff should have been imposed on consumers of tomato paste before the creation of a domestic paste industry was assured. More fundamentally, since the supply of paste to Canada from the rest of the world is highly price elastic, the tariff is bound to result in net welfare losses in addition to relatively large income transfers that will favour growers, processors and government at the expense of consumers. Preliminary analysis indicates that if an "infant" tomato solids industry is established behind the newly erected tariff barrier, then the gain in producer surplus associated with an expansion in tomato acreage to service the tomato solids industry would be offset by a consumer loss, which might be as high as four times the producer gain. Also, for every $1 of income transferred to producers, there could be a welfare loss to society of as much as $1.13. If the industry fails to "grow up," the net welfare loss will persist indefinitely. And even if the industry does indeed reach maturity it is not at all clear that the political process will be capable of removing the protection when it is no longer needed. Moreover, in order for the infant industry to warrant protection today and for a period into the future, it must promise a benefit at maturity and must be sufficient to compensate for the years of net losses during infancy; that is, the ability to "grow up" is not sufficient to warrant being born if the discounted flow of costs and benefits is not positive. It has yet to be shown that the paste industry passes such a test. Until it does, its creation with tariff protection and capital subsidies would seem to be premature.

This judgment is reinforced by the knowledge that there is an alternative, namely growth through competitive efficiency. Tomato prices have long been higher than was necessary to elicit the contracted supply, as is evidenced by the excess demand for production contracts at negotiated price levels. Furthermore, there is ample room for improving production efficiency by introducing mechanical harvesting (and electronic colour grading) and increasing the scale of production unit. At a very minimum, Canadian society can properly expect that if a tomato solids industry is to be established in Canada, it should be served by those growers who are known to be able and willing to produce at a profit at lower prices for processing tomatoes than those that now prevail. To this end, there would appear to be merit in exploring systems of end-use pricing for tomatoes for processing.

As for processing asparagus, few would deny that market structural conditions require growers to be able to countervail the market power of processors through collective negotiation on price and sales conditions. But despite the substantial bargaining power that Ontario processing asparagus growers have exercised in the Canadian market place behind protective tariffs, the grower segment of the Ontario asparagus industry has regressed over the past decade. The Ontario asparagus processing industry has survived throughout the 1970s. It has achieved this despite the handicaps of a technologically backward production sector, higher prices for the raw product than for its foreign competitors, failure of the growers' organization to live up to its delivery contracts, and discouragement to processors to produce for themselves the raw product that growers were unwilling to deliver. The national processing industry has been forced to become more dependent on imported raw product which, however, has been taxed for the benefit of the domestic growers.

If the asparagus production and processing industry in Ontario is to flourish over the long haul, it

should be on the basis of increased production efficiency at the grower level and the availability to processors of expanding and consistent supplies of competitively priced raw product. This requires changes in production, pricing, and marketing arrangements. Happily, there are signs that constructive changes are afoot. A research program to find higher-yielding varieties has been launched. Starting in 1980, new marketing arrangements for processing asparagus have been introduced. The OAGMB is to continue to act as a selling agent for processing asparagus, but processors will be allowed to contract directly with growers for raw product from new plantings. The contracts have a fifteen-year term. Of course, for this policy to be successful, the contracts must be legally enforcable and, indeed, legally enforced.

Other changes in marketing arrangements must be examined if the asparagus processing industry is to develop. In particular, if adequate supplies of asparagus are not forthcoming from farmers to meet their requirements, there should be no impediments to processors increasing their level of plant self-sufficiency for raw product.

The wisdom of granting the board power to unilaterally set prices may be questioned. The previously held collective bargaining powers of the board were quite sufficient to protect the interests of growers when negotiating prices, conditions, and terms of sale with processors. If the OAGMB fails to exercise its power to set prices with moderation, then the asparagus processing industry will continue to decline in Ontario, irrespective of the improvements that are made in production and varietal practices or in improvements in marketing arrangements. This moderation would be encouraged if the tariff on raw product were reconsidered. As was noted for tomatoes, exchange rate changes and rising transport costs already provide substantial protection.

The general lesson on the effects of regulation in the Ontario processed tomato and asparagus industries is that the future of these industries lies in productivity enhancement and improved competitive efficiency. There is no doubt whatsoever that growers need countervailing power in a situation where buyers are so concentrated. However, the authors are left with the impression that marketing board pricing powers and tariff protection have been used as substitutes for the structural changes, productivity improvements, and the joint producer-processor commitment to market development which would offer a path to industry growth that would better serve Canada.

9 The Grains Sector

The grains industry in western Canada encompasses the majority of Canadian farmers (over 148,000) and, since many are also red meat producers, constitutes the major sector of Canadian agriculture. Ninety per cent of Canadian grain and oilseed receipts comes from the West and more than half the Prairie farms derive at least 51 per cent of their gross revenues from grain.[1] Owner occupation is the dominant form of land tenure, though approximately half the "commercial" farms are involved in some form of tenancy arrangements, often within families. The family farm is the predominant farming unit. They have grown larger over the years as total improved acreage has increased about 15 per cent to 89,000 acres and total farms decreased about 22 per cent. The substitution of capital for labour is also evidenced in increased capitalization per farm and the use of larger, more efficient, labour-substituting machinery.

The grains industry can be defined as: the farmers who raise grain, mainly in the CWB area; the suppliers of farm inputs; the marketing system, including the primary collection system of country elevators which receive, store, dry, clean, and ship grain to domestic users or export terminals, who also receive grain and have facilities to dry, clean and ship it; the transportation system, which moves grain; public and private institutions such as elevator companies and producer co-operatives (a majority of the elevators are owned by co-operatives); inspection, standards and grading and marketing institutions and infrastructure provided by the Canadian Grain Commission, the Canadian Wheat Board, the Canadian Transport Commission, the National Harbours Board, departments of Agriculture, including the federal and provincial policies affecting the grains industry (for example, the CWB Act and Feed Grains policy); and last, but most important in the long run, the customers for grain.[2] Although complex, the Canadian grains industry does not involve a substantial secondary processing and distribution component and is thus relatively simple compared with many manufacturing industries.

Total annual receipts for western grains have increased from about $900 million in 1962 to about $4 billion in the late 1970s. Production has been as high as 38 million metric tonnes in 1976-77 and as low as 12 million metric tonnes in 1961-62, more commonly ranging between 24 and 35 million metric tonnes. Exports, production less domestic consumption and stock changes, have commonly ranged from 15 to 22 million metric tonnes. Industry groups have forecast demand for Canadian exportable grain surpluses of 25 to 30 million metric tonnes by 1985, conditional on a variety of factors discussed in other sections of this study. Figure 9-1 indicates the size and complexity of the western grains production, handling, and transportation system.

Figure 9-1

The Canadian Grain Production, Handling and Transportation System, Circa 1980

148,000	producers in the three Prairie provinces had
47 million	acres planted and
25 million	acres summer fallow to deliver about
28 million	tonnes of grain and oilseeds per year to
3,700	country elevators located at
1,500	railway shipping points served by
17,000	miles of rail line. It is moved by
13,000	boxcars and
10,000	hopper cars (government and CWB) with
379	locomotives to
20	terminal elevators (3.9 million metric tonne storage capacity) located at Vancouver, Prince Rupert, Thunder Bay and Churchill, Manitoba, from which
21.9 million	tonnes worth
$3.4 billion	were exported from reserves for the 1977-78 crop year.

SOURCE This illuminating summary was used by Henry Ropertz, Grains Group, in a seminar on "Contemporary Issues in Grain Handling and Transportation," University of Guelph, March 1980.

Between the 1966-67 and the 1976-77 seasons, rising world prices and increased yields per acre resulted in increased real revenues per acre in the three Prairie provinces. However, the variability of that revenue around the rising trend is illustrated by the fact that the average gross margin (grain proceeds less cash costs but excluding capital costs) per seeded and summer fallow acre has been as high as $49 in 1975, as low as $15 in 1971, and was about $29 in 1978.

Wheat marketings as a percentage of production have been as high as 123 per cent of production in 1972-73 and as low as 65 per cent in 1976-77. Thus, as a result of variability in production, the ability of the grains handling and transportation system (GHTS) to move grain to export positions (mainly Vancouver and Thunder Bay) as well as the strength of the world market, opening stocks of wheat have varied between a high of 29 million metric tonnes and a low of 10 million metric tonnes. Opening stocks were about 13 million metric tonnes in 1978-79. In recent years, marketings have been between 12 and 19 million metric tonnes. Barley production has been around 12 million metric tonnes but, since much of it is used on the farm for feed, only about 4 million metric tonnes carryover storage from year to year has been required in recent years. About 50 to 60 per cent of barley production is marketed each year. Of course, all grains must be stored for a time after harvest. The GHTS is particularly strained at harvest time in years of high production. Increased on- and off-farm storage has taken place and raises the question of the optimum or most cost efficient level and configuration of storage capacity.

Canada has little control over world grain prices. Government policy also allows the world price to determine the domestic price for grains (with the exception of periods of domestic wheat price protection and a tariff on imports of U.S. corn). While Canada historically sells about 20 per cent of the wheat traded in the world market, our exports can only influence, not determine, the price. About 20 per cent of world production is traded and there are a number of barriers to grain trade such as tariff and quota arrangements. Not unreasonably, grain deficit countries consume all their domestic production and only import the amount needed to balance their shortfall. In times of financial stress, lack of foreign exchange and the like, some countries do not even do that. Because of the variability in world grain production (especially in Russia and Canada), and because some countries change their purchasing policies from year to year (especially China and Russia), world grain prices have exhibited wide swings, which are reflected in the price received at the farm in the Prairies. In 1971-72, the Canadian farm price for the average bushel of wheat was near $1.30, it rose to about $4.40 in 1973-74, and has since declined to the $3.00 range and then risen to over $5.00 in the 1979-80. In fact, in the absence of cartel agreements between the major grain exporters, Canada is effectively a world "price taker" and the analysis which follows assumes that Canadian export volumes have no long-term influence on world price levels.

Production Decisions

A world price is the realistic situation facing the individual grain farmer who must decide how to best allocate his or her resources, mainly land, equipment,

Table 9-1

Exports of Wheat and Flour by Principal Exporters, as a Share of World Trade, 1974/75 to 1979/80

	Total world trade	Share of world trade					World trade as a share of world production
		Argentina	Australia	Canada	United States	Other	
	(Millions of metric tonnes)	(Per cent)					
1974/75	62.6	3.5	12.8	17.1	45.0	21.8	17.5
1975/76	66.8	4.6	12.1	18.4	47.4	17.5	19.0
1976/77	61.8	9.0	13.5	21.6	42.1	15.5	14.9
1977/78	72.1	3.7	15.3	22.1	43.5	17.3	18.9
1978/79	70.5	4.7	10.3	18.5	45.8	20.7	n/a
1979/80	86.5	5.5	17.8	18.3	43.0	15.4	n/a

n/a Not available.

SOURCE D. R. Harvey, "Government Intervention and Regulation in the Canadian Grains Industry," Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy, Technical Report E/I 6, Ottawa, 1981; and Canadian Wheat Board, *Annual Report 1979-80* (Winnipeg: CWB, 1980).

and labour, among a variety of wheat, barley, oats, oilseeds (flax and rapeseed), summer fallow (moisture, weed management, and production restrictions) and, for many, livestock and other farm businesses. This set of decisions is complex and depends on individual producer assessments of future prices of each possible commodity that may be produced, the biological risks associated with each crop, the financial situation of the farmer (capitalization, cash flow needs, and so on), the ability of the GHTS to sell and transport the crop, and the effects of agricultural policies and programs on revenues and marketing opportunities. This process is a classical example of decision making under uncertainty because these production decisions are made six months to a year before a crop is harvested and many decisions are planned to work into a longer-range production plan. Close to 80 per cent of the variability of Prairie grain production can be attributed to soil moisture content. This variation is out of the producer's control. Fertilizer use and application, pesticide application, and development and usage of new varieties of grains and oilseed crops can and do, in particular circumstances, lead to increased yields, given clement weather conditions. Summer fallow is used to conserve moisture and for weed control, but there is evidence that it has also led to increased salinity levels, which reduce yields.[3]

It is obvious, then, that production decisions are highly interactive with each other, and the most important element in what is produced is the decision maker's estimate of long-term return to acreage sown (yield times price) and the estimate of the GHTS's capability to move and sell the output in any one year. Most Prairie farmers have only livestock production (beef and hog) as the major alternative to arable crops. Historically, livestock production has been a method of moving grain when it could not be sold in its raw form because of depressed world markets. Economic factors are such that Prairie livestock production increases during low grain prices and declines with high grain prices.

The foregoing comprise the medium- to long-term considerations in production decisions but, after harvesting, the producer makes a series of short-run decisions, with considerably more information than was available for the production decisions, about how to sell the crop most profitably. The various alternatives include selling it to the CWB, selling it on the domestic feed market, feeding it to livestock or holding it for higher prices – usually an alternative to selling it on the domestic market once one has delivered all the quota grain called for by the Wheat Board. If the CWB marketing quota is "open," that is, the Board can sell all the grain delivered, the domestic price is close to the world (CWB) price. In recent years, the Board has had to restrict sales because the GHTS could not handle all the grain produced. When this occurs, the local Prairie market prices tend to be below world prices, although price premiums may develop in grain deficit (high livestock production) areas of the Prairies.

The intervention and regulatory system for grains analysed in the balance of this chapter has a differential effect on individual grain producers. Farmers with low equity positions are particularly vulnerable to cash flow problems and, since high intensity cultivation requires higher cash outlays and hence greater risk, summer fallow and low-intensity cultivation (low fertilizer and pesticide use) are conservative postures. While most farmers are not in low equity positions and, given the nature of Prairie farming, are not particularly risk-averse, in light of recent cases where the GHTS has not been able to move all the grain produced and, when confused or confusing signals about storage capabilities and final grain prices being paid by the CWB are received, it is not unreasonable for some producers to restrict production and for Canada to lose export sales opportunities. Therefore, one major problem facing the intervention and regulation system is how to provide clearer signals far enough in advance to influence production decision making. If this is not possible, and it may not be realistic in some cases because of the inherent biological and economic variability of the system, then policies that exploit the positive aspects of the variability and mitigate its negative consequences should be investigated, since they may be socially and economically desirable.

Two schemes to reduce the negative aspects of the inherent variability of the grains system already exist. The Western Grain Stabilization Act provides producers with the opportunity to avoid catastrophic losses due to low grain prices and crop insurance schemes provide some protection against biological loss. However, schemes to exploit market opportunities and increase output, without saddling individuals with all the risks associated with high output when the GHTS cannot cope with the volume or a sudden fall in price, are still matters requiring continuing discussion and debate. With this brief background of the types of decisions being made by individual grain producers and the types of information that affect those decisions, we now address the problems of the grains industry and its associated intervention and regulatory policies.

Problems

The problems facing the grains industry are simple and complex; simple in that technical transportation and economic problems are soluble, complex because the political problems are extremely intractable. The political and institutional system for dealing with problems in the grains industry has evolved from the late 1800s to the present day. But evolution always seems to lag behind current pressures and many existing institutional and political attitudes seem in conflict with change and with the further development of policies and institutions to meet an environment much different from that which spawned the original system. It can be argued that the evolutionary process is now too slow, and even that institutional and short-run political interests are now preventing evolution altogether and thus leading to the decline of the industry. Whichever is the case, we have no doubt that changes are needed in the areas discussed below.

Early experience with the open market for grain in western Canada was not very pleasant for the then-new settlers. Lack of effective communication between farmers and the elevator company, the concentration of cash cropping on few varieties and the resulting constriction of the harvest to a short time period, severe cash flow problems and high debt structures, and the lack of developed farm storage certainly led to rapid (downward) price movements at harvest times. High prices established one day, which declined dramatically as farmers hurried to deliver grain the next, would naturally destroy one's faith in the ability of open markets to perform reliably and advantageously. Small wonder there arose an intense feeling that the private trade (multinational grain companies and monopolistic railway conglomerates alike) is not to be trusted to serve the farming community adequately. Co-operative farm movements and regulatory activities were the response to this historical situation. The animosity of many to the private trade, however well or badly founded, is still strong and widely held, especially but not exclusively among older producers. These feelings pervade any discussion of change, and are the basis for political action and strong feelings surrounding any discussion of systemic modification.[4]

All aspects of the grains industry are so intertwined that any breakdown of its various components is arbitrary. We have divided our analysis into four sections. The first three (grain grading and sales priorities, grain handling system, and railroads and "the Crow") investigate the major components of the grains industry and the effects of intervention and regulation on its functioning. The final section (net farm returns) summarizes the conclusions of seven reports about the overall functioning of the system when compared with that in the United States.

Grain Grading and Sales Priorities

Canadian wheat is sold by grade, under a grading system legalized in the Canada Grains Act, which specifies very precise classifications and procedures for grading and handling grains. There are many advantages to precise and high-grade standards. The Canadian system developed to allow international transactions to be undertaken "sight unseen," the buyer being able to rely on a grade description as an accurate and comprehensive picture of the cargo. The high regard and premium prices Canadian hard wheats command in world markets are due in part to customer confidence in the quality of these wheats for bread manufacture and on the certification of quality when the grain is shipped. The present grades and grading system has evolved over the years to the point where it is being emulated by the United States and other wheat-producing countries.[5] There is no question that we should continue to extract the maximum advantage from the present system.

However, there are indications that there are some negative aspects to the grading, handling, and selling system which may be restraining the maximum utilization of wheat growing land and the congested GHTS. These situations are difficult to document and even more difficult to prove; but, because they have been cited so frequently by responsible individuals and groups, we would be remiss were we not to set out three of them here in our discussion of the effects of regulatory activities on the grains system.

The first is that the Canadian Grain Commission (CGC) has resisted, successfully, the introduction of a grade for lower-protein-content wheats, thereby restricting the production of this type of grain. The CGC has refused to grant the licensing of these new low-protein wheats because they, in conjunction with the CWB and other grain industry members, believe that the protein content of Canadian wheat for export should be maintained at a higher level than they believe would occur if licences were granted. Since the GHTS is already working to capacity, greater volumes of lower-protein-content wheats, they contend, would further strain the system.[6] The producers wanting to grow this new type of grain contend that the mix of grains and oilseeds that should be produced varies from region to region based on each region's biological and economic comparative advantages. Classes of grain other than high-protein, hard red spring wheat should be produced as long as the net return to the producers is advantageous. Low grain prices and demand in the

late 1960s and early 1970s led to increased oilseed production and a wider range of other grains being grown and sold. This added to the diversity and stability of grains sales. In line with this trend is the fact that exports of high-quality wheats in the recent past have been relatively constant while export growth has been concentrated in lower-quality wheats and some producers and industry participants believe too much emphasis is being placed on hard, high-protein wheats. No one questions the fact that Canada will continue to export a majority of the latter. We have not been able to uncover an economic analysis to support or repute either side of this controversy. We do believe that further study of the potential benefits of medium-quality, higher-yielding spring wheats may indicate benefits to certain areas of the Prairies were they licensed. The regulatory system should at least not be an impediment to such developments. It should ideally encourage adaptation to changing needs of the industry.

A second contention is that the statutory requirement for highly cleaned grain to meet rigid grade classifications at times introduces a bottleneck into an already congested GHTS. Many, if not most, customers desire highly cleaned wheat, but other customers will accept, and some may well prefer, wheat with a higher dockage level. This latter type of wheat may be sold, but only on application to the CGC, unlike prescribed grades, which require no additional regulatory approval. The CGC and the CWB point out that few requests are made, which they take to indicate little need. However, the red tape involved in making such applications is an additional cost in time and uncertainty. It is also quite likely that buyers for this type of wheat are not sought out by the sellers who concentrate on selling premium wheats. There is no record of the CWB pricing according to foreign material content, so buyers naturally will take clean grain whereas, during periods of stress, higher dockage levels, compensated by lower prices, could well increase the system's ability to move more grain. In the same vein, there are statutory rules that state that certain grades of wheat cannot be mixed (to form a grain of lesser protein content) at terminal elevators. While there are some good reasons for controls on grade standards, it appears that statutory prohibitions of this sort are overly restrictive. The two situations described here at least question whether the flexibility to respond to industry needs is less than optimal because of statutory regulations and their application by the Canadian Wheat Board and the Canadian Grain Commission.

Finally, in this section, there is an argument that the CWB has tended to maximize its sales of high-quality wheat at the expense of lower-quality wheats, feed grains, and oilseeds. The reasoning behind these charges is this: equivalent spot prices for these products at the export terminals are often higher than for high-quality wheat, indicating that the CWB tends to have available for export relatively more high-quality wheat than other products. Shippers at the terminals are willing to pay higher prices for other grains and oilseeds than they would if adequate stocks were available at ports. A less accusatory explanation may be that high-quality wheat, being the major seller, is arriving at ports with greater regularity than these other crops and is consequently more available. It may also be the case that much of the wheat is in export position against long-term contracts, for which the spot price is of little consequence.

The picture emerging shows a need to reassess the marketing strategy of the grading and selling system and on the basis of that assessment to ensure that production, grade standards, and sales programs are in line with what appear to be the changing character of export demands. Even more basic is the need to address the question of whether the function of the grading and selling system is to adapt the productive capacity of the grains industry to changing conditions or some other goal. If the former, how can the system be designed to adapt rapidly enough to optimally fulfil its role? As will continue to emerge, the system is moving vast quantities of product, but the cumulative effects of many small problems, which taken by themselves appear minor, can result in significant lost opportunities which need not occur.

The Grain-Handling System

The country elevator system, which first receives the farmers' grain, developed in the late 1800s, when road networks were rudimentary and the railroads were overbuilt. As the only real transportation link, all towns on the Prairies developed along the railroads. The price per tonne that railroads receive for transporting grain was fixed in 1897 dollars. That price remains today.

While the railroads have been able to obtain prices that reflect the real value of rail transport from other traffic, the real returns from grain have been falling. This relative decline in revenues has been a contributory factor in the deterioration of the branch lines that serve as a collecting network for grain. As well, "statutory" grain has received lower priority for main line transport than more rationally priced cargo, as explained below.

However, probably more important than the price received for transporting grain is the geographical distribution of the elevators that first receive the grain and the relationship of this distribution of elevators to

the road network over which farmers deliver grain. Production patterns have changed since the elevator system was originally built along the many branch lines and, combined with the modern road network which has been constructed more recently, some elevators are used much more heavily than others. Ten years ago, over 5,000 country elevators existed compared with today's 3,700, which is a result of scale economies, elevators employing higher technologies, and improved road access to these larger elevators with their faster service.

It is believed that this rationalization of the GHTS to the current economic reality would probably have taken place earlier, with a concomitant increase in system capacity, were it not for regulatory intervention of several kinds. We have identified at least seven factors that tend to retard rationalization of the grain handling system.

- First, elevating companies, 80 per cent of which are owned and operated by farmers' co-operatives, are regulated by the CGC, which allows them to set a price on their services up to a ceiling imposed by the Commission. Companies can, and do, set their prices below this maximum. However, all elevators under the same ownership usually charge the same price for each service, that is, there is no price differentiation between elevators of the same company within a province. This behaviour reflects the oligopolistic structure of the elevating industry.

- Second, because of the highly emotional issues associated with branch line abandonment (for example, the erroneous assumption that small towns on them will die solely because of the withdrawal of rail services), it has taken many years, many government inquiries, and much conflict to come up with a plan that may be implemented to close the uneconomic branch lines.[7]

- Third, the railroads have foregone investment in branch lines and have deferred maintenance expenditure because of statutory (Crow) rates. These rates were 10.23 cents per tonne below the total cost of moving grains to export positions reported by the Snavely Commission.[8]

- Fourth, even if these rates were raised, it has been shown that many branch lines are still uneconomic compared with truck collection. Only under conditions described in the following section are branch lines a viable alternative to road for grain collection.

- Fifth, the federal government has paid subsidies of about $700 million since 1971-72 and at least $170 million to the railroads for branch line rehabilitation, hence maintaining, in professor Anderson's words, a "high-cost grain rail system."[9]

- Sixth, the oligopolistic nature of the elevator system is such that a return to a freer system would almost certainly lead to overcapacity as the companies vie for business. Continued regulation of elevator operation and placement is indicated in this situation.

- Finally, a main factor in restricting and retarding consolidation of the elevator system has been the statutory rates, since producers cannot compare the "true" system costs to alternatives. Changes in the statutory rates *and* variable, volume-related freight rates based on improving the "bulk" characteristics of grains, discussed in the next section, are needed to fully reflect "true" system costs of regulatory interventions.

The result has been that, while there are price/cost signals that have resulted in some change, these signals are blunted, do not get transmitted to producers and, as we shall see, have almost certainly contributed to maintaining high-cost, obsolete, collecting elevators and branch lines in existence far beyond their useful life, while discouraging investment in newer, higher-productivity elevating and railroad facilities.

It is not unfair to characterize the grains handling system as one using mainly administrative quantity mechanisms, as opposed to price mechanisms, as the predominate methods to regulate and control the flow of grain through the GHTS. Examples of the major areas where administrative mechanisms appear to result in unnecessary problems in the system serve to illustrate how a combination of price and administrative tools may more efficiently utilize the present system to the mutual benefit of most, if not all, system members.

The efficient use of the elevator system (country, inland terminal, and export terminal) is retarded by the fact that there is limited price differentiation for elevation services among most country elevators. This price rigidity is especially constraining to the GHTS during peak harvesting and shipping periods and in particularly wet seasons. Greater multishift operations of terminal elevators and overtime and weekend working of country elevators is not practiced because premiums are not charged. This is the case even if their use would benefit some producers and shippers of grain who would be willing to pay extra for the service. While premiums are paid to producers who clean and dry grain prior to delivery, the value of this service differs from time to time. When things are slack and all grain is relatively dry, cleaning and drying facilities are not under capacity

constraints. However, at peak shipping times or during exceptionally wet periods, the value to shippers of clean or dry grain rises and these bottlenecks in the system could be reduced through some differential pricing. The only explanation for the lack of price differentiation is that the producer cooperatives, which own most of the elevators, choose not to use price differentiation as an incentive for more efficiently utilizing their facilities. Since all handling charges are subject to the approval of the CGC, which would normally not allow price differentials that exploited monopoly positions, price differentials related to cost or efficiency considerations appear to offer scope for signals that would more efficiently utilize present and future grains handling capacity.

A second example of administrative quality controls as a regulatory tool is the CWB's decision to not allow temporal price differentiation for grain deliveries even though grain delivered at harvest is less expensive to produce, in that it has less physical and financial storage costs associated with it than grain delivered later in the year. The reality of this fact is reflected in futures prices on world grain exchanges. The CWB has instead instituted a quota delivery system, which is a quantity control system, whereby all farmers may deliver grain up to their quota allotment at periods throughout the year as sales require and as transport is available. At times in recent years, the Board has had to use "terminating" quotas under which grain must be delivered by a certain date, otherwise the right to delivery under that quota is cancelled. This has become necessary in order to encourage the delivery of the appropriate grains at the right time, a function fulfilled south of the border and in other industries by the price mechanism. The need to resort to this administrative expedient is itself the result of the price mechanism. It occurs when current and future domestic prices are assessed by producers as being equal to or above the anticipated CWB price.[10]

In the same quantity control tradition, the CWB quota system allocates the right to sell grain on an acreage basis rather than on the productivity of land, thereby reducing the economic value of highly productive land and enhancing the value of less productive land. Each acre of land under the CWB jurisdiction is given the same delivery "quota;" however, the ability of lands in the Prairies to grow grains varies widely. Some acreages produce 35 bushels an acre on average and over the years; others average 20 bushels an acre. The lack of differentiation of the productive capacity of land leads to more extensive use of land, for example, summer fallow, or simply "idle" or "underutilized" land, in order to generate the ability to deliver grain rather than produce it. Low-quality perennial pasture is useful for the same reason. In addition, it has been suggested that the quota method of regulating grain deliveries also leads to "low adoption rates for new, high-yielding grain varieties (and perhaps less emphasis on the development of these varieties in the first place), low use of fertilizer and chemicals, and . . . in general . . . to non-adoption of land-augmenting capital."[11]

Finally, as regards quantity control mechanisms, when there is competition between elevators, it is usually in the form of willingness to accept grain delivery rather than in price. Where two or more elevating companies locate close to each other they compete by being open for more deliveries than elevators in monopoly locations. Each of the elevating companies receives grain cars for loading according to a formula. The companies, in turn, may allocate their allotment of grain cars to their elevators as they see fit. Elevators in competition tend to get more cars than those in monopoly situations. This is most likely attributable to two factors: multiple elevators are located where they are because the demand for their services is high, and business lost to other elevators is more visible, leading elevator managers to exert greater pressure for empty cars for their elevators.

Each of the preceding examples of total reliance on quantity controls as the regulatory mechanisms leads us to the opinion that industry members have unnecessarily restricted the use of a powerful tool – price differentiation – as a business and regulatory device to more efficiently and effectively utilize existing grain handling capacity. A re-evaluation of these practices is strongly indicated.

Greater use of price as a control mechanism is only part of the solution, as there is a lack of investment in grain storage capacity in terminal elevators due to a number of factors among which pricing of services probably has an effect. The severity of storage capacity shortfall is a subject of acrimonious debate and the reality is hard to pin down. If a system always has adequate capacity, it is, from a business viewpoint, usually too large. If sales are never lost, then inventories are too high. By the same token, if facilities are idle on weekends and evenings in the peak harvest periods, especially the high-fixed-cost facilities used in the grains industry, then they are not being efficiently utilized. The elevator companies counter with the argument that they would invest more but present facilities are not used to capacity. There is merit in that argument but still there is undercapacity in some locations and overcapacity in others because the adjustment of grain-handling

capacity is not perfect and the need for adjustment may be more difficult to detect where there are no price signals to highlight capacity constraints.

The Booz-Allen and Hamilton report concluded that the total GHTS is operating reasonably well but that a 15 per cent efficiency improvement is possible.[12] But the CWB believes it has had to pass up about $1 billion of sales in recent crop years because the GHTS was not able to handle the throughput. Given a total sales figure of over $3 billion, and the possibility of a 15 per cent increase in throughput through improved efficiency, then at least another 15 to 20 per cent increase in terminal capacity and storage is indicated, especially if production expands to meet forecast demand potential.

It is clear to us that the use of average costs as the basis of pricing services whose values and time of need may vary widely, plus the institution of administrative quantity controls, rather than some use of quantity and price, or solely price, to control and direct grain movement within the GHTS, has led to, at the same time, underutilization of the system and underinvestment. This must have contributed to a loss of sales to the grains industry. Increases in returns from additional grain sales would repay investment in added grain storage capacity, according to the Booz-Allen and Hamilton analysis.

Railroads and "the Crow"

In 1897, the Parliament of Canada, as part of an agreement with the Canadian Pacific Railroad, obtained reductions on the price of moving grains from the Prairies to export ports. The resulting rates for shipping grains have been fixed at the 1897 rate by statute and extended to particular ports on grain moving for "export" only. This agreement is known as the Crow's Nest Pass Agreement, after the western boundary of the agreement area, and the rates are popularly called "the Crow."

For many years farmers and railroads were content with the arrangement. Since World War II, and especially more recently, there has been a gross revenue shortfall for the railways, which is estimated to be near $300 million in 1981 (see Table 9-2). Since statutory rates are set in 1897 dollars but paid in current dollars, in real terms grain is significantly less expensive to ship today than even five years ago.

The most important effect of the Crow subsidy to farmers is to raise the price of grain delivered to the export system from what it otherwise would be and thus raise income from grain production. Farmers therefore grow more grain and, more importantly, market more grain in its raw form than they would without the subsidy. Production of livestock, and the secondary grain and meat processing and the transport associated with this increased livestock production, suffer. Land prices are bid up (estimated at $30 per acre) as the expected future benefit of the Crow subsidy is capitalized into the value of grain-growing land.[13]

Table 9-2

The Crow Gap Gross Revenue Shortfall, 1972-76 (Actual) to 1987 (Estimate)

	Exportable surplus	Crow gap	Gross revenue shortfall
	(Millions of metric tonnes)	(1978 dollars per tonne)	(Millions of 1978 dollars)
1972-76 average	19.1	10.8	210
1976	25.8	9.0	232
1977	23.8	9.9	236
1978	24.4	10.8	263
1980[e]	24.4	11.4	278
1985[e]	28.1	12.5	351
1987[e]	30.1	12.8	388

e Estimate.
SOURCE D. R. Harvey, "Government Intervention and Regulation."

In effect, grain producers are having their incomes increased by the amount of the shortfall of the real cost of transporting grain to the export ports (approximately $260 million in 1978 or $320 million in 1981). Redistribution of the shortfall by changing the real costs of transport will damage agricultural incomes in western Canada by approximately the amount of the shortfall initially and improve the incomes of taxpayers and railway shareholders throughout Canada by the same amount. Once adjustment to the new farm gate prices for grain and increased livestock production is made, this income loss will be partly but not completely offset, as shown in Table 9-3. Although total real final product in agriculture will increase ($98 million in 1978 terms), the redistribution of rail costs ($260 million in 1978) results in a net decline in income from agriculture. It is well to stress the point that, in total, Canada is better off by an increase in real final product ($172 million in 1978) and by the reduction in resource distortion that the shortfall causes. The sources of conflict over the amount and direction of any change in the status quo is obvious.

Table 9-3

Estimated Real Final Product Changes Resulting from an Increase in Rail Rates from Crow Rates to Cost Covering Rates, Western Canada, 1978

	Western Canada (including British Columbia)	Manitoba	Saskatchewan	Alberta
		(Millions of dollars)		
Grain production	-102	-16	-24	-57
Livestock production	200	34	61	95
Total agriculture	98	18	37	37
Secondary industry	74			
Total	172			

SOURCE D. R. Harvey, *An Economic Analysis of the Crows Nest Pass Rates* (Montreal: The Institute for Research on Public Policy, 1980).

Concern has been voiced about the secondary effects of rationalization of the Crow rates on livestock producers in eastern Canada. It is feared that increased western livestock production may put eastern feeders at a disadvantage. On present trends, this does not appear probable. More probable is that Canadian livestock production (beef and pork) will be susceptible to increasingly intense competition from the United States *unless* grain transportation rates are rationalized in Canada. This example of the primary and secondary effects of changing the terms on which the grains industry functions serves to highlight the fact that grain is the backbone of Canadian agriculture and that intervention and regulatory activities affecting it have complex, far-reaching, long-term, strategic consequences.

The natural reaction of the railroads to the revenue shortfall, which they have been financing in the main, is to defer branch line maintenance, refuse to invest in grain related rolling stock, improve service to grain only under duress, and allegedly assign Crow-rated grain deliveries a low priority; the latter charge has been given a Scottish verdict of "unproven" by many people. It is not a question of equity, or justice or reneging on an obligation by the railroads, but that the nature of transport in western Canada has changed with the development of publicly supported, freely accessible road systems, and competition from trucking firms and farmers themselves. In the beginning, grain and other traffic had contributed sufficiently to operating and overhead costs to make rail transport profitable for the railroads on branch lines. But, as common truck carriers bid away portions of this traffic more suitable for road transport, and as the railroads themselves reacted to this competitive threat by lowering charges to commodities most suitable and profitable for rail transport, the total volume of traffic on branch line railroads declined (although total rail traffic grew immensely). The railroads' least profitable services, small package and general freight on the branch lines, were the victims. The publicly supported road systems provide an alternative at lower cost to all concerned where, to cover the cost of service, the price for rail would be too high to draw traffic.[14]

Compensatory rates apart, there are concerns in the rail-truck interface that are relevant to this discussion.

Of all agricultural produce still most rail-dependent, grain, particularly grain moving long distances to market, has enough of the cost characteristics of bulk loading products to give the railway a competitive edge over trucks. There is no visible breakthrough in the technology of roads and trucks likely to threaten this edge. However, trucks have the advantage in all aspects of costs of transport (regardless even of fuel price if both modes pay equivalently) until enough parcels of grain can be gathered to fill sufficient rail cars to give full scope for rail's cost advantage. In high-yield areas, the optimum volume will be gathered by short truck hauls. In lower-yield areas, the economic distance of truck haul may be considerable. It is not a matter of distance at all but a matter of gathering by truck enough grain at one place to warrant bringing in a train.

The size of that volume varies, depending on a range of costs, such as the state of the track and the elevator capacity. A collection point that can load a minimum of 20 to 30 rail cars in the time interval between car drop-off and pick-up will divide the operating advantages of both truck and rail economically between the modes. If three such lots can be assembled in one train run for delivery to one or two destinations, there is no cost advantage to trucks that can displace train service under these conditions.

Alternatively, until volumes of this order can be assembled, trains lose out to trucks on the basis of cost, given the fact that roads are publicly provided

and will be maintained regardless of grain traffic volumes.

Even in the matter of fuel consumption, there are greater gains in converting to larger trucks to pull grain to the railroad's optimal loading point than in extending train service closer to producers. Any future fuel allocation scheme ignoring the efficiencies of larger, fully loaded trucks will distort resource use.

The rail mode achieves its greatest efficiency when it collects multiple car blocks of traffic from few points of origin for delivery to few destinations. This is sometimes referred to as "hook and haul" service. It eliminates both the physical and paperwork costs and delays of single-car spotting, pick-up, marshalling into trains, and breaking out of cars for individual destinations. The characteristics needed for bulk service also include short turnaround time at both origin and destination to maximize equipment utilization, plus of course, adequate power and main line capacity to keep the trains moving. It further helps costs of maintenance and operation if the traffic uses as few types of engines and cars as possible.[15]

A few agricultural shipments can, by special arrangement, be made to fit these requirements. Normally none do, not even grains. And yet grains have been characterized as bulk commodities for decades. It is an approximation, a term applied to grain in the historical period when there was no true bulk commodity movement of any significance.

Rail transport since 1960 has benefited by the growth of new traffic much more suited to the characteristics of rail operation than grain ever was or can be. True bulk commodities such as coal, sulphur, potash, and other minerals and concentrates have utilized "solid block" or "whole train" concepts and have grown in volume to the point of absorbing most of the excess main line capacity, which has always been assumed to be a characteristic of railways.[16] Unlike grain, these commodities do not move in separate identifiable carloads, they require no network of branch lines with all the investment needed to gather and store product in thousands of tiny bins corresponding to grades. These true bulk commodities move from few origin to few destination points in a simple and tidy fashion. Railways have no traditional common carrier obligations to these commodities. They move on rates set by bargained contract, not by regulated rates. Their rolling stock is new, uniform, and committed, economizing on time and energy. They have brought the rail mode into its optimum milieu. They have broken the last link of dependency of the rail system upon grain. Their transport logistics have set standards that grain does not match.

Not only have these bulk commodities displaced grain as more desirable commodities to move, but also they are competitive with grain for main line space, motive power, manpower, and some equipment. They also move in smoother, more predictable patterns, unencumbered by the plethora of government, corporate, and union jurisdictions that afflict grain. They are, in short, less costly and, at present, more remunerative. Both features make them preferred traffic to export grain.

It should be clear from the above discussion of the characteristics of the grain-rail interface that, because of the characteristics of the export grain traffic, grain is less suited to the economics of rail haul than other bulk loading export traffic competing for main line space. It should be clear as well that remunerative rail rate levels, however financed, will not give export grain priority of place over other traffic, or even necessarily parity of place. Much more than rate reparation is required to fit grain traffic competitively into a crowded rail system.[17]

Two ingredients are required to provide the needed effect on grain's ability to command higher priorities in the transport system. One is greater scope for improvement within the grain export industry to regulate itself and order its affairs to become more truly akin to a true bulk commodity. Grain is presently shipped in tens of thousands of individually identified units (box and hopper cars) from many points of origin to specific destinations. Most of these units are specific grades whose contents are identical, or nearly so, to other units. A reduction in the number of individually identified and routed units is indicated if grain is to assume more of the "hook and haul" characteristics of true bulk commodities. While block shipping of grains has helped in this regard, there is much more room for further change in the operation of the system in this direction. This leads to the second ingredient – change in the policy-making process – which will produce modifications to the system based on a societal view of the problems and their solutions, rather than favouring only a few of the system's interest groups. This latter problem is one facing all regulatory and intervention activities, not just those in agriculture, and is a case of suboptimization of system components leading to less than optimal performance of the total system. The present system of policy making in grains is deficient in this regard and our recommendations are aimed at rectifying this situation.

Net Farm Returns

In the final analysis, the test of the grain-handling, transport, and marketing systems' performances is their ability to generate profits to producers' use of

their land, labour, and capital. While the methodological problems are severe, it is hard to resist comparing our system with that south of the border. Such comparisons must be limited to comparable areas, for example, to equal average per acre yields on Canadian and U.S. farms and identical distances from export ports (such as midstate North Dakota-Duluth and Portage la Prairie-Thunder Bay).[18] The basic hypotheses of such studies are that, if the GHTS is efficient in both countries, and if equal prices are obtained at export for comparable quality grains, then, because Canadian producers' transport costs are subsidized by the Crow rates, Canadian farmers should receive higher net farm gate prices than their U.S. counterparts.

The results of five studies and critiques of two of those studies are summarized in Table 9-4. Such comparisons are fraught with methodological problems, no one study used exactly the same data or methodology, nor were most of their authors adamant about their findings, as they recognized sources of errors and variability in estimation and measurement. In spite of these difficulties, we draw four conclusions. First, there is no strong evidence that Canadian farmers receive higher prices for equal type and quality of grain than their comparable U.S. counterparts. Second, there is weak evidence that the Canadian GHTS is more expensive than the U.S. system.[19] Third, there is conflicting evidence which at least questions whether the Canadian Wheat Board receives as high prices at export ports as do U.S. sellers. Fourth, the contradictions in the research reinforces the need for internal management evaluation and control mechanisms for the CWB and for other elements of the GHTS, which were found wanting in the companion research report on the grains industry.

Policy Responses

To put into perspective the policy responses of the government and their regulatory bodies to grains problems, they should be viewed in relation to the total regulatory and intervention complex facing the grains industry. Recent policies are often responses to deficiencies of previous intervention and regulation. Some of these deficiencies were inherent in the original programs, others resulted from changes in the environment facing the industry, the major elements of which have been presented previously.

Table 9-4

Summary of Comparisons of the Canadian and U.S. Grain-Handling, Transport, and Selling Systems

	Realized Canadian farm price less U.S. farm price	Implicit Canadian GHTS costs less U.S. GHTS costs	Apparent Canadian export price less U.S. export price
Study:			
Peltier and Anderson	-	?	?
Canadian Wheat Board critique of Peltier and Anderson	+	+	+
McCalla and Schmitz	- early years + later years	n/a	n/a
Foodwest	-	-	-
Canadian Wheat Board critique of Foodwest	+	+	+
Canada Grain Council	-	-	-
Harvey	n/d	-	n/d

\+ Canadian performance better than U.S. performance.
\- Canadian performance worse than U.S. performance.
n/d No significant difference.
n/a Not available or not analysed.
? Results not conclusive.

SOURCE K. Peltier and D. F. Anderson, "Canadian Grain Marketing System," North Dakota State University, Agricultural Economics Report 130, Fargo, N.D., 1979; Alex F. McCalla and Andrew Schmitz, "Grain Marketing Systems: The Case of the United States versus Canada," *American Journal of Agricultural Economics* 61:199-212; Foodwest Resource Consultants, "U.S. Grain Handling and Transportation with Selected Comparisons to the Canadian System," a report prepared for Alberta Transportation, Edmonton, June 1979; Donald A. Dever, "Features of U.S. Grain Handling and Transportation System Which May Hold Potential for Canada," Canada Grain Council, Winnipeg, April 1980; Harvey, "Government Intervention and Regulation;" and various reports and releases from the Canadian Wheat Board.

Table 9-5 presents a summary of the transfers, costs, and benefits of the major regulatory and intervention schemes in the grains industry as they stood in early 1981.

Table 9-5

Summary of Transfers, Costs, and Benefits of Major Regulation and Intervention in Canadian Grains

	Transfers				
	Type	From	To	Cost	Benefit
Canadian Wheat Board (CWB)					
a) Central Selling Agency (CSA)	Marketing opportunities and margins	Grain trade, private company shareholders	Grain producers (through the CWB)	Potential disadvantages: - Absence of profit motive, tendency towards bureaucratic control and lack of innovation/sales drive	Potential exploitation of CSA advantages stemming from: - Production and transport characteristics - World grain market characteristics - Control over export flows - International negotiating power
b) Marketing strategy	Same as above	Same as above	Same as above	- Disappointing price performance, farm grain receipts below those in northern United States - Concentration on hard, spring wheats and lack of response to growing feed grain markets - limited by production patterns	- Larger, more regular volumes, given supply characteristics, than private trade through concentration on Canadian exportable surplus
c) Marketing tactics	Grain forwarding control and incentive	Private trade and open market	CWB and producers of board grains	- Lack of price mechanism, lack of incentive/flexibility to use GHTS efficiently and thus loss of export capacity and higher costs - Conflict between board and off/on board markets - Contributes to disappointing price performance	- Potentially more control over deliveries and grain forwarding (not apparent in practice) - Reduces marketing expertise required of producers - Allows price pooling and 'equity' objectives to be met
d) Equity/ distribution					
i) Price pooling	Dollars	Producers with relative risk preference and marketing expertise	Risk averse producers without marketing expertise	- Compulsory nature of pooling reduces freedom of choice - Lack of price incentive for delivery scheduling - Encouragement of commercial rather than (cheaper) farm storage, hence need for quotas	- Avoids producer responsibility for intra-year marketing decisions
ii) Quota	Dollars	Intensive producers on high quality land	Extensive producers on low quality land	- Reduced production and exports (5 to 20 million metric tonnes a year) - Resource misallocation, more extensive production of board grains, encouragement of non-board grains, land market distortions	- Control over export volumes - Control over distribution of delivery opportunities among producers

Table 9-5 (concl'd)

	Transfers				
	Type	From	To	Cost	Benefit
Grain handling and transportation system					
a) Crow rates					
i) Cost shortfall	$220 million/year, growing	Taxpayers, $60 to $70 million	Grain producers (land prices increased by perhaps $30/acre)	- $65 to $170 million/year in foregone real final product (agriculture and agribusiness)	- "Cast iron" rail rate control
ii) Loss of output	$100 million/year, growing	Railways, $150 to $160 million	Grain production, western Canada	- Lack of investment and enthusiasm for grain export movement, leads to need for further remedial intervention (capital requirements, $120 million/year)	- Subsidy to grain producers ($220 million/year)
iii) Regulation of rail rates	Establishment of rate structure	Livestock production, western Canada	Government (fixed by statute)	- Lack of price incentives for efficient use of system	
		Railways and users (the CWB)			
b) Grain transport co-ordinator	Some responsibility for GHTS efficiency	Railroads and the CWB	Grain transport co-ordinator	- One more level of regulation and one more "whipping boy" for lack of performance	- Improved system performance but within current institutional and operational constraints
c) Capital expenditure on rehabilitation and upgrading branch lines	Approximately $120 million/per year in subsidies	Taxpayers	Railways and grain exports	- Lack of effective interest in efficiency of investment	- Expansion of grain export capacity (but not necessarily utilization) of GHTS by 5 to 10 million metric tonnes ($625 to $1,250 million/year gross revenue)
d) Regulation of GHTS					
i) Elevators, Canadian Grain Commission	- Some control over tariff setting - Potential control over elevator system configuration	Handling companies	Government, CGC	- Lack of effective price differentials between facilities (some elevating companies do not compete in price) - Cost and difficulties of formulating minimum cost elevator configuration on an ongoing (dynamic) basis - Potential to reduce local competition, and associated cost of regulating monopoly profits and lack of service	- Regulation of local monopolistic profit - Potential to achieve a more efficient system
ii) Branch line abandonment	- Control over abandonment - Cost responsibility for branch line fixed costs ($50 to $60 million/year)	Railways	Government	- Administrative and enquiry costs - Subsidization of uneconomic branch lines	- Regulation of railways' potential ability to dictate configuration of GHTS - Control over effects on local and rural economy and infrastructure
Western Grain Stabilization Act					
	$50 million/year	Taxpayer	Grain producers	- Opportunity cost of taxpayers' money	- Increased grain production and exports
	Dollars	Grain receipts in years of relatively high receipts	Grain receipts in years of relatively poor receipts	- Interest charges on inter-year producer transfers	- Reduction in risk of very poor income years - Increased stability of agribusiness, rural and regional economies

SOURCE Harvey, "Government Intervention and Regulation."

Four major policy responses are identifiable from Table 9-5. First, many policies are aimed at increasing the rate of response in the regulatory system. The system has substituted administrative-regulatory decisions for a market-oriented price mechanism for controlling production, collecting, transportation, and sales of grains for export. Second is the change towards a market mechanism for grains in domestic use, which in effect competes in price and for transport space with export grains. Third, except for pricing of domestic grains, all responses to the GHTS problems (transport costs, transport capital needs for grain movements, branch line maintenance and abandonment, and export terminal investment) have been government and railroad transfers to the grains industry and increasing government responsibility (at least implicitly) for the performance of that system, at the expense of direct user interest and responsibility. The indirect transfers are large and growing but, because they occur without government transfers, they are less noticeable. Fourth, the institution of the Western Grain Stabilization Act is designed to increase stability of agribusiness and the rural and regional economies of the Prairies in a way that should have a minimal distorting effect on resource allocation. It provides a stabilizing influence on farm incomes and should be a positive assistance to change by absorbing some of their effects on the income of farmers and their secondary effects on the Prairie economy.

Summing the costs of the various responses provides estimates of direct costs in 1981 of about $250 million and indirect costs, if we include estimates of sales foregone due to the inability of the GHTS to move grain, which amount to between $450 and $1,250 million. While these are large numbers, and recognizing the difficulty of being precise in the estimation of indirect costs, these expenditures were about the average per farm of federal expenditures for all farms and about one-third of the per tonne level reached on occasions by U.S. wheat support expenditures ($7 versus $20).[20] However, our purpose is not to compare and justify such expenditures but to ascertain whether they are the best expenditure of funds and of regulatory and intervention resources for the long-run interests of Canada. It is to these conclusions and recommendations that we turn.

Conclusions and Recommendations

The grains industry, the agribusiness serving it and flowing from it, and the towns and people working in it, mainly in the Prairies, is robust, growing, modernizing, and changing in response to new technology and to the changing international environment facing world grain exporters. The GHTS is changing; archaic elevators have been closed, new inland and export grain facilities are being built, the CWB and other agencies have purchased new rolling stock, and the road network is good and is being upgraded continually. Diversified development of a wide range of resources has provided railroads with a base of traffic that has resulted in less dependence on grain than that of 20 years ago, although they still move almost all the grain and oilseeds not consumed in the Prairies and grain still accounts for 20 to 25 per cent of freight on a volume basis in the western region.

Since World War II, provincial social policies have encouraged the centralization of services, mainly hospitals and schools, into towns of a size necessary to support the provision of a broader range of social and economic needs than could the very small, isolated towns of the early days. This conclusion on the vitality of the Prairies is in stark contrast to the picture portrayed, often by provincial governments, of stagnation and decay. There is some stagnation and decay, but this is of minuscule magnitude and occurs in the small, isolated elevator towns whose functions of 50 and 60 years ago have been eroded and neutralized through the development of, among other things, improved road systems, rural electrification, and the social policies regarding hospitals and schools.

We reached the conclusion that, in many respects, regulation and intervention in the grains industry is acting as a restraint on its ability to adjust to changing conditions and to perform at higher levels. While recognizing the legitimate role of government to soften the effects of economic and social change in an industry that has gone through more than its share of both, there is strong evidence that institutional ossification of attitudes and entrenched positions of many institutions in the grains industry are acting as deterrents to change for no justifiable public interest reason. Much of the present regulation and intervention system was designed to serve a system that had poor road systems and small towns and farming units. Grain was the only real source of railroad revenue. Excess grain production was the norm. There were few buyers of grain and poor information systems about production and prices. There is ample evidence that producers were exploited and that the regulatory system, which substituted government and co-operative institutions and bureaucratic decision making for a privately owned, price-controlled system, has served the farmer and the country well until recently. Even now, it is doing not badly. However, it could do better, and the costs of not making some changes are high and growing.

Briefly, there are eight major concerns requiring reform.

- First, producers need better signals about the system's ability to sell their output if they are to take the risks inherent in increased production. Part of the same problem is assurance, failing the ability to sell all of a year's crop, that individuals do not have to assume all the costs and risks associated with year-to-year holdovers. Provision of these signals is inherent in some of the recommendations below.

- Second, the wheat grading system, while second to none in guaranteeing exacting quality requirements for purchasers, may at times act as a constraint to sales where buyers' needs are not the same as the quality provided by the grading system. Both the grading scheme's legislative mandate and its application need re-evaluation as to their functions in serving Canada and its grains industry.

- Third, the present quota system discriminates against the more productive land and more efficient farmer. The result is that producers hold land solely as a means of selling output, adding unnecessarily to production costs. Furthermore, its practical ability to accurately control and synchronize rail movements from country to port is not well demonstrated, while its effect on production practices, when limiting total annual deliveries, results in underexploitation of Canada's grain-growing potential.

- Fourth, the grain collection and handling system, regulated by the Canadian Grain Commission and the Canadian Wheat Board, uses quantity delivery controls as its sole regulatory instrument. The use of price differentiation in most forms has been abrogated as a regulatory tool resulting in underutilization of capital facilities, lower investment in new facilities and technology, and reduced competition by elevator companies in processing grain. There are many areas where the price mechanism would be a more suitable tool than quantity controls.

- Fifth, the statutory rates for shipping grain – the Crow rates – are distorting agricultural production towards grains and away from livestock and meat processing and they constitute a growing net loss of output in the Prairie region. The railroads and the government are subsidizing the increasing shortfall of revenues to move the grains at the statutory rates and the former refuse to make capital investments to improve and expand their grain movement capabilities. The political sensitivity of this issue, the entrenched position of the governments and farm groups involved, the rigidities and difficulties surrounding any legislative changes, and fear of the unknown in a system that works, albeit inefficiently, all contribute to making this particular issue pivotal to more general regulatory change.

- Sixth, grain as it is presently shipped, in single carloads at the extreme, is not a bulk commodity and, even with compensatory rates, they cannot command priority over bulk commodities on today's railroads, which are working at near capacity levels. To take advantage of rail's economies and to command higher priorities over other traffic requires the ability of the industry and the leadership of the regulatory agencies to move towards making grain more like a true bulk commodity – more unitizing of trains and multiple car shipments of the same grade and type of grain to single destinations.

- Seventh, the major regulatory and selling agency, the Canadian Wheat Board, has been accused of many shortcomings but the main criticism that we discovered, and then only a matter of degree, is a lack of aggressiveness in attacking new ventures and an overemphasis on selling high-grade wheat at the expense of feed grains and oilseeds. Being a government body, it has strengths in planning and co-ordinating export grain sales that less-centralized, open market systems do not. Its central and commanding role in regulatory matters in the grains industry, its historical performance, and its wide acceptance by producers make its disappearance from the scene unthinkable and unsupportable. However, it apparently lacks sufficient internal control and evaluatory mechanisms with which it may better provide internal direction to its own efforts, measure its accomplishments, highlight areas needing improvement internally, and document strengths and weaknesses of other parts of the GHTS not under its control but affecting the CWB's ability to perform efficiently in the marketing of grain. There also appears to be a need for public access to data controlled by the Board for independent, objective evaluation of its performance. To date, such evaluations have had to rely on secondary, inferential data sources where primary sales and price information would be more accurate, timely, and enlightening.

- Finally, faults in regulation and intervention in the grains industry, where traceable, cannot be attributed to one culprit. Rather, any culpability is that of a system whose parts and procedures are often conflicting and where each action is taken for justifiable reasons that, in the long run and from the whole system's point of view, are counterproductive. There is some evidence that the benefits of statutory rates and other transfers are being lost in system inefficiencies, since producers do not receive prices at the farm gate above those of comparable farmers south of the border. We believe that changes in the regulatory system could significantly improve the performance of the Canadian grains industry in both production and marketing.

However, many of the changes suggested here have ramifications throughout the grains industry. Furthermore, the suggestions have a common thread of generally greater emphasis on the price mechanism and marketing efficiency and effectiveness and on marketing opportunities and de-emphasis on equality of treatment. This development is significantly different from the current situation, and our general thrust will not be argued for by any of the current institutions and agencies involved in the grains industry, including the governments, without a very clear message from the whole industry that such a development is desirable. Yet, unless it is debated, who is to tell whether it is desirable? If defence of current institutional and agency interests prevent such a debate from developing on a sufficient scale to provide a genuine answer, then Canada, including its grain farmers, will be the loser.

A major underlying problem that beset the grains industry in the past – year-to-year income variation – appears to have been substantially reduced by the Western Grain Stabilization Act. As a result, the income environment within which the industry and the Prairie region must make decisions has altered. The WGSA introduced the most inventive, least resource-distorting program of any agricultural income stabilization scheme we know of. With it, producers may protect themselves against low prices and hence reduce the risks under which they operate. Coupled with the Crop Insurance Act, the major reasons for the conservatism that has characterized much of the producers' decisions in the past have now been significantly relieved. Conditions in the 1980s should be much more conducive to increasing output to meet increased world demand, but such a response requires that the system's signals to producers are clear.

Given the complexity of the grains industry and its participants, it would be impertinent for us to offer a complete solution to the regulatory and intervention problems were we convinced we had the answers, which we do not. We do propose a re-evaluation of the functions of regulation and the means by which these goals may be achieved. One option is a completely nonregulated system, which only exists as a theoretical abstraction (and which reintroduces some of the problems past regulation practices have tried to solve). At the other extreme is complete government ownership and control, which raises problems of its own and is probably equally unacceptable to most farmers.

Having said that, it appears to us that the system as it is, subsidizing many wealthy producers at the expense of less well-off Canadians and to the detriment of future producers, is equally untenable. In the case of the grains industry, where many producers make a wide range of decisions, there appears to be the need for signals of the type provided by a price mechanism to help indicate needs for increased production, to share delivery patterns between the domestic and export markets, to differentiate and recompense different types and times of service in delivery and processing, to reward efficient and to penalize inefficient usage of the transport system to the benefit of the producer, and to allow for competition of the most positive type among members of the industry. Given the experience of monopolistic exploitation and overcapacity problems of previous, less regulated times (much of which is a natural outcome of thin, dispersed, specialized land usage with few alternative uses of agricultural resources) there is every reason for continuing regulation of some activities in the system. Many of the changes in pricing listed above are such that they can be instituted by regulatory agencies, in small steps, year by year, and their effect can be evaluated as their use develops. We recommend immediate steps by the Canadian Grain Commission, the Canadian Wheat Board, and the Canadian Transport Commission to plan, implement, and influence appropriate changes, such as those outlined above.

More fundamental changes to the system are ranked according to our perception of their importance. First and foremost is a system to rationalize statutory grain freight rates and to ensure that they do not become even more unbalanced than they now are. Second, and one that will be facilitated by rate rationalization, is investment in capital facilities (grain storage and handling capacity and main line rail capacity). Following these are changes in methods for altering the grain grading and control system as well as in methods for grain payment, quota allocation, and the way grain is requested and delivered to elevators. Any hope of success will require government commitment to rationalization. We are convinced that the payoffs will be large in terms of increases in Canadian economic well-being and, more importantly, of the reduction in conflict among goverments and other participants in the grains industry that a fairer, more equitable system of transfers would bring about.

Because of the sensitivity of the attitudes widely held, both in favour and against various elements of the present system, and of the greater scope for achieving consensus among individuals than among institutions, and because no existing institution can fill the role of development planner for the industry, we recommend that the federal government in consultation with the provinces establish a Grains Industry

Secretariat, composed of knowledgeable and influential individuals, reflecting a variety of individual and entrepreneurial interests and points of view in the grains industry.[21] The explicit obligation of the Grains Industry Secretariat would be to examine and objectively define the fundamental interests, benefits, and burdens in the industry and to be responsible for reporting back to interested groups in the grains industry, government and nongovernment alike, on the consensus it has reached in its examination. It will further be its responsibility to generate consensus between and among interests in the grains industry and to generate political support for that consensus. It is encouraging to see that such a group has recently been proposed to tackle "the Crow" question. We heartily support such efforts but also urge an expanded, more comprehensive attack on the problem. There is no reason to go slow and every reason to provide the grains industry with the tools to meet the challenge, opportunity, and international commitment to increased output and improved performance.

10 The Red Meats Sector

The red meats sector is largely composed of the beef and pork industries and is one of the most important components of the Canadian food system. Around one-third of total farm cash receipts are made up of sales of cattle and hogs, and domestic feed grains are a major production input. In value-added terms, meat slaughtering and processing is the largest manufacturing industry in western Canada and the third largest in Canada. Purchases of beef and pork account for almost one-fifth of consumers' food expenditures. Canada has a positive net trade balance in red meats and livestock products.

Problems

The Canadian red meats industry is beset by three major problems: instability, foreign competition, and market imperfections.

Throughout this century, market instability has been a characteristic of both the beef and pork components of the red meats sector. Perturbations in the market have been of two types: short-term fluctuations in prices resulting from temporary imbalances in supply of and demand for cattle and hogs; and the longer-term cyclical movements in supplies and prices (the hog and beef cycles), that occur when livestock farmers make production decisions on the basis of current prices although the output from these decisions is not marketable for months (hogs) or even years (beef cattle).

During the 1970s, underlying cyclical movements in livestock and meat markets were exacerbated by two main factors. Volatility in feed grain prices added another element of instability into an already uncertain environment for planning livestock production. Additionally, instabilities in world beef markets were transmitted to the Canadian market through trade flows in beef products. A third source of economic instability has risen recently from escalating interest rates, which have cut producers' margins severely.

The wide swings in prices for cattle and hogs and in feed and capital costs that were a characteristic of the 1970s caused considerable instability in the incomes of cattle and hog producers. The impact was felt particularly by cow-calf producers and weaner pig producers who are "on the crack end of the whip" in this unstable sector. In a wider perspective, the unstable nature of livestock markets provides a poor guide to resource allocation and constrains the development of the red meats industry in Canada.

International competition has not been a major issue for the hog industry, but Canadian cattle producers have been concerned about competition from offshore supplies of beef, which, they charge, have an adverse impact on the domestic market for cull cows, slaughter cattle, and derivative feeder and calf prices. More particularly, beef producers have complained about the price-depressing effects of periodic increases in beef imports deflected into the relatively open Canadian market by the restrictive beef import policies of Japan, the European Economic Community, and the United States.

A third problem area for many livestock producers has been the functioning of markets for their products, particularly with regard to disparities in bargaining power and imperfections in the price formation process. There are many livestock producers and relatively few livestock buyers. This has not been a major issue with cattlemen in recent years but hog producers have been very dissatisfied with their bargaining position vis-à-vis the meat packing industry. Prairie hog producers, in particular, have been disturbed by the growing concentration in the meat packing industry in the West, and have believed that differentials in hog prices between western Canada and eastern Canada are influenced more by the actions of the packing industry in the West than by the supply and demand conditions prevailing in each region.

Policy Responses

Governments have used three general policy instruments to address the problems of market

instability, competition from overseas suppliers and imperfections in the markets for hogs and cattle.

- At the federal level, the Agricultural Stabilization Act has been the primary legislative vehicle used to attenuate market instability in both the beef and hog subsectors.
- Trade policy measures have been put in place to regulate competition from overseas suppliers of beef.
- Producer marketing boards have been established by provincial governments with a view to increasing hog producers' bargaining power in the market place and increasing efficiency in the marketing system for hogs.

Market Instability

The Agricultural Stabilization Act (ASA) was introduced in 1958. The objectives of the Act were, first and foremost, to support farm incomes during periods of low market returns and, secondly, to encourage growth and development in the food system by stabilizing prices and supplies. Hogs and slaughter cattle were named commodities under the Act.

Under this legislation, deficiency payments were made if the average market price in a given year for market hogs and slaughter cattle fell below 80 per cent of the average market price during the previous ten years. In effect, it was a floor *price* program that offered producers no protection of their *margins* from erosion by specific input cost increases or inflation. The inadequacies of this price stabilization program became evident in the early 1970s when escalating feed grain prices contributed to declining margins in livestock production. As a result, the ASA was amended in 1975:

- the base period was shortened from ten years to five;
- the percentage of the base period price was increased from 80 per cent to a minimum 90 per cent of the previous five-year average;
- the prescribed minimum price was adjusted to reflect changes in cash costs in arriving at the support level, thereby offering some protection to hog and cattle feeders' margins;
- limits were placed on the quantity of a commodity eligible for support; and
- the Act allowed the federal government to enter into agreements with individual provinces and producer groups to set a higher "shared cost" support level.

Competition from Overseas Beef Suppliers

In addition to long-established fixed rate tariffs that provide modest protection to domestic beef producers, during the 1970s the federal government has used import surcharges, informal bilateral agreements with offshore suppliers of beef, and formal import quotas and licences to afford beef producers additional market protection during periods of depressed feeding margins. These measures were also used to protect livestock producers from the adverse impact of U.S. domestic and trade policy measures for beef that were put in place in the first half of the decade.

In November 1980, new beef import legislation passed first reading in the House of Commons and is progressing through the legislative process. The proposed legislation provides authority to set quotas on beef imports based on the average level of imports in the 1971-75 period, adjusted annually for changes from the base period in domestic disappearance of beef. It also has a counter-cyclical supply adjustment provision. That is, when supplies of domestic beef decrease, import quotas will be expanded, and vice versa. The draft legislation also provides that, in determining the level of import quotas, factors such as the supply and price of other meats and restrictions affecting cattle or beef trade with other countries will be considered. However, Canada made a minimum access commitment in the Multilateral Trade Negotiations that beef imports would not be less than 139.2 million pounds in 1980 and that, in future years, this figure would be adjusted upward in line with growth in population.

Increased Bargaining Power and Market Efficiency

Hog producers have used three broad approaches to improve and assure their position in the market place.[1]

- They have looked to combines legislation and commissions of enquiry to attempt to break down or curtail concentrations of buying power. However, "trust busting" has not been very successful in enhancing their bargaining position vis-à-vis the meat packers.
- Voluntary producer co-operatives have been established to undertake such functions as shipping hogs, providing a central selling organization, or actually slaughtering and processing hogs. While the co-operatives achieved some success in lowering market cost, they apparently failed to develop and sustain effective countervailing power.
- They were successful in having compulsory producer marketing boards established. The first hog

marketing board was created in Ontario in 1946. Hog producers in seven of the remaining provinces subsequently formed marketing boards or commissions, and by 1980 almost two-thirds of the hogs in Canada were marketed through such agencies. Neither Quebec[2] nor Newfoundland has a marketing board of commission, at the present time, although in the heavily concentrated Quebec hog sector, a farmer co-operative, Coop Fédérée, is a major market player and is fully integrated into the hog feed, hog production, and hog marketing sectors.

All the hog boards or commissions have adopted either centralized selling systems, or they price hogs using formulas that have as their basis hog prices in major Canadian and/or U.S. markets. All the hog boards have adopted some form of price pooling for their commodity and most of the boards operate hog assembly yards in conjunction with their centralized selling systems. Hog boards in Ontario and the three Prairie provinces, and the Coop Fédérée in Quebec, are involved in export sales and export market development. Virtually all the boards and commissions are actively involved in pork promotion programs in Canada. Only two of the boards (Alberta and Saskatchewan) do not possess quota powers in their regulations but, as yet, no board has used its supply management powers.

As for beef producers, their relationship with the meat packing subsector, while never cosy, has not been characterized by the continuous series of confrontations which has been the norm in the hog industry. To date, beef producers have favoured competitive marketing systems and have not supported the establishment of producer marketing boards. Instead, in some provinces, co-operative marketing groups have been formed and have operated with some success. Additionally, beef producers have acted collectively through their major organization, the Canadian Cattlemen's Association, to increase the flow of market information to producers through such programs an Canfax and Beef Watch.

Infrequently, and with only limited success, beef producers have turned to government in an attempt to correct imperfections in the functioning of the market. Live cattle pricing and the carcass grading system have been consistent bones of contention for beef producers. Often as not, it is around these issues that producer calls for government action have been focused.

Regulation Results

Market Instability

There are intrinsic and early limits to what can be accomplished to stabilize supplies and prices of red meats and the incomes of livestock producers when using the ASA as the major stabilization policy instrument:

- the interaction of supply of and demand for red meats in North America is the dominant determinant of cattle and hog prices in Canada, and cyclical instability in Canadian livestock markets is tied inextricably to cyclical instability in U.S. livestock markets; and
- instability in international grain markets has a destabilizing effect on livestock markets in Canada through the relationship between feed costs and producers' margins and by influencing the deployment of resources between grain and livestock production (particularly in the Prairie provinces).

Specific inadequacies of the ASA program itself limit its potency in stabilizing slaughter cattle and hog production:

- because the program is annual, producers may experience a period of low returns within the year but not receive stabilization payments;
- because the level of support is not announced in advance, producers have no idea of what the support level will be, if any, until after the fact and as a result, the program does nothing to shift producers' expectations about future returns from livestock production, thus having only a small impact, if any, on current production decisions; and
- because weaner pig and calf/feeder producers receive no direct support under the Act, they experience large price and margin swings from troughs to peaks of the hog and beef cycles; these fluctuations reduce any stabilizing effect which the program may provide for slaughter cattle and hogs.

For these reasons, while the program has provided some income supplements to hog and cattle producers as a group during some periods of low returns, it has had only a marginal stabilizing influence on the Canadian red meats sector.

Because of these limitations in the ASA, provincial governments have "top loaded" the federal program with provincial stabilization schemes. The differential minimum prices thus established across the country now threaten to create distortions in interregional comparative advantages, and the level of price support offered in some provinces may encourage overproduction, especially in hogs.

Competition from Overseas Suppliers

The Canadian hog industry is extremely efficient and competes successfully in the North American and world markets.

The cattle industry is also internationally competitive, and Canada was for long one of the world's most open markets for beef exporters. As noted above, under the disturbed market conditions that have prevailed in world, continental and national beef markets from the mid-1970s onward, the Canadian beef industry has been forced to seek controls in imports of beef from offshore sources, mainly from Australia and New Zealand. However, there is no reason to believe that the progressively tighter controls that have been introduced in recent years have been harmful to Canadian consumers, for beef prices have continued to be below equilibrium levels and beef supplies have been exceptionally abundant.

Increased Bargaining Power and Market Efficiency

Beef producers have generally not been dissatisfied with their bargaining position vis-à-vis the cattle slaughtering and meat processing industry. A majority of producers have held a preference for a diversity of competitive marketing channels and systems, and have opposed selling their cattle through a centralized producer agency and the introduction of a supply management and cost of production pricing program.

Producer marketing boards for hogs have performed admirably in furthering the interests of their constituents. In our judgment, and for the reasons given below, they have also served the public interest.

The selling procedures developed in the three major hog producing provinces with hog marketing boards have made the process of price formation and discovery more informed and competitive. Marketing boards in other provinces that use formulas to establish price have maintained competitive price differentials between their region and other producing and consuming regions.

The bargaining power of hog producers has been strengthened through their boards, but this power has been used solely to countervail the market power of the packers.

The boards have tried to even out price variations in the short term by encouraging a more orderly flow of hogs to market and by adopting daily or weekly price pools for producers. They have not been capable of addressing the more fundamental problem of cyclical instability for hogs, for this phenomenon is, of course, beyond the control of boards with jurisdiction only within provincial boundaries.

The centralized selling and price pooling activities of boards ensure that, in the short term, all producers receive the same price for hogs of the same grade, thereby enhancing equity among producers.

Marketing costs for hogs have been increased where producers are obliged to deliver hogs to an assembly yard, but offsetting economies in transference of title and selling by grade, for example, have significantly lowered overall marketing costs. Further, some boards have sponsored research into hog production, which has served to increase the general level of hog production efficiency.

The export activities of the major hog marketing boards are also commendable, and it is encouraging that the boards take an active interest in promoting pork sales through, for example, provincial advertising campaigns and consumer educational programs.

Finally, hog marketing boards have had no detrimental impact on consumer prices for pork. Indeed, the reverse is the case for, by stimulating increased production and marketing efficiencies, the impact of the boards on consumers has been positive.[3]

Regulatory Reform

Market Instability

The instability characteristic of the red meats sector in North America is costly for producers, the meat packing and meat processing industry, consumers, and taxpayers. Resources are misallocated at the livestock production level. Meat packers and procesors must provide excess capacity to handle the surge in meat supplies during the expansion phase of the livestock cycle. Consumers face periodic price peaks for meat products, which are an important component of their diet. Taxpayers must provide stop-loss payments to livestock producers when markets turn down. For all these reasons, there could be widely shared benefits from measures that would enhance stability in the red meats sector. But how this is to be accomplished is one of the most crucial issues in Canadian farm and food policy.

A minority of livestock producers have called for the establishment of national supply management programs for hogs and beef cattle. Such an approach is offered as a means of securing more stable prices and margins for producers, more stable supplies and prices of livestock for packers and of meat products to consumers, and an end to direct expenditures on stabilization programs by governments. However, the present authors believe that supply management is

neither a feasible nor a desirable stabilization alternative for the Canadian hog or cattle industries. This is for four main reasons. First, at the purely practical level, it is utterly implausible to suppose that hog and (still less) beef supplies, prices, and margins could be successfully controlled. Second, competition between red meats and substitutes, particularly poultry meats, would erode program benefits for hog and cattle producers. Third, necessary frontier restrictions on imported live animals and meat supplies would spawn retaliation by the United States, and the nation and the red meats sector itself would be worse off if the cattle and hog industries were serving only the domestic market. Fourth, at this point, there is no reason to anticipate that supply management in the red meats sector would not lead to all the excesses and malignancies with which – as has earlier been shown – the use of the technique is associated in the egg, poultry meat, and dairy industries.

Neither the beef nor the hog sectors need insulation from long-run competitive market forces. They are dynamic, efficient, and internationally competitive. There is, however, a clear case for a larger public commitment to enhancing stability. Realistic limits must be acknowledged for the level of stability that can be established in domestic livestock markets so long as the Canadian red meats sector is part of the North American and world markets – and we believe it should be – and as long as domestic and international grain markets are unstable – which they certainly will be. Nonetheless, something can be done to attenuate the instability problem. Since supply management programs are not the answer – experience attests that the cure would be worse than the disease – reliance should be placed on an improved ASA for hogs and cattle and trade policy measures for beef.

Our preferred direct stabilization policy is to revamp the current ASA on lines similar to the "GM-100" proposal that has been developed by Agriculture Canada[4] and an analogous scheme analysed by Martin in a research report commissioned for this enquiry.[5]

A restructured ASA should include several significant features.

- The program should explicitly provide forward guarantees of some stated proportion (which could be 100 per cent) of market-determined margins over variable costs. The ASA, as presently operated, only implicitly "assures" unknown and changeable proportions of margins that vary by commodity.

- The margin guarantees should be for periods less than a year and should reflect normal seasonal market movements. By basing support prices for, say, each quarter on past market experience in that quarter, the usual seasonal price pattern would be maintained and farmers who produce for what are normally the high-price periods of the year would not be penalized.

- The program should be voluntary and contributory (as is the current program under the Western Grain Stabilization Act). There are substantial benefits accruing to producers from such an income assurance program. If producers value this guarantee of income stability, then they should be expected to contribute to the cost of the program. And producers who wish to secure larger stability benefits than some ceiling level to which the public contributes should be able to do so, provided that they bear the additional costs.

- The nature of the program, the level of support, and its method of calculation should be made known before it is operative in any year. This is a mandatory feature if the program is to influence producers' future production decisions.

- Weaner pig producers and cow-calf operators should be included within the program. As identified earlier, these two groups of producers bear the brunt of the income instability associated with livestock cycles. Under the current federal program, weaner pigs, calves, and stockers are not named commodities.

- Program eligibility requirements should be based on production in earlier years to ensure that only regular producers receive program benefits, and should have a minimum livestock sales requirement to exclude noncommercial farmers who do not require public support.

- Provincial governments should agree to end their agricultural stabilization programs in return for the introduction of an improved national program so as to avoid distortions in interregional production and trade.

Martin, in presenting the results of simulations of alternative stabilization policies on the red meats sector, provides analytical support for such an explicit margin guarantee program.[6] He shows that the present ASA price-centred program would not have made a significant contribution to the stability of livestock producers' profit margins at any time during the 1965-79 period. But margin programs based on either prices net of feed costs or net of all cash costs would have provided significant income support to beef producers during the 1974-77 period, and to hog producers during 1974 when profits were restricted because of higher feed prices. Benefits would accrue primarily to livestock producers (through payments and from selling larger volumes in higher priced periods) and, to a lesser extent, meat

packers and processors. Given the North American basis of the red meats sector and Canada's positive net trade balance in livestock and red meats, few gains would accrue to consumers as such in terms of supply or price stability as the additional domestic supply would either substitute for imported meat products or be exported. However, there would also be positive benefits to the Canadian economy as a whole through expanded economic activity and a larger balance-of-payment contribution.

Beef and hog producers can also attempt to cope with market instability in their sector by means other than recourse to federal or provincial government assistance. For example, producers (either individually or as a group) can endeavour to establish term contracts with packers such that they are guaranteed a margin over feed costs. Some marketing boards have already offered their members such contracts for hogs destined for export markets. Also, futures markets can be used to "lock in" a guaranteed return, and perhaps hog marketing boards could add a futures trading function to their mandate and provide their members with technical counsel, short-term margin financing, and even hog contracts with specified prices which the boards could then hedge on the U.S. futures markets.

Competition from Overseas Suppliers

Legislation on beef imports will likely be enacted in 1982. We endorse the beef import quota restrictions included in the proposed legislation as a defensible measure to provide some price protection to domestic beef producers during periods of severely depressed margins and as a necessary safeguard against disruptions to the Canadian beef market attributable to the actions of other countries. The present authors are unenthusiastic about its counter-cyclical provisions for, in effect, Canada will be "exporting" the burden of adjusting to cycles *that originate domestically* to countries (largely Australia and New Zealand) that supply Canada with beef products. This is bad trade practice. However, with some reluctance, we have come to support the counter-cyclical provisions of the proposed meat import law for the following reasons:

- it will place a floor under beef prices at times when they are at exceptionally low levels and marginally reduce taxpayer expenditures on slaughter cattle and cow-calf stabilization programs;
- it may provide a psychological boost to producer confidence by its very existence, thereby influencing (in a positive manner) the supply response of beef producers;
- it is necessary to have a beef import law that is in tune with the U.S. Meat Import Law so as to safeguard normal trading relationship with that country and maintain access to a vitally important market for Canadian livestock and meat producers;
- the external damage to trade relations with suppliers in Australia and New Zealand will be mitigated by Canada's minimum access commitment given in the multinational trade negotiations;
- consumers will be represented on a committee to advise the minister of Agriculture on the annual levels of import quotas for beef; and
- the mechanisms for determining import quota levels will include substantial discretionary elements.

Increased Bargaining Power and Market Efficiency

For beef producers, the marketing system operates quite well as it is. Of course, there is scope for continuing improvements. For instance, an expansion in the quantity and quality of the market information that is disseminated to producers, and an accelerated move towards systems of rail-grade beef transactions, electronic selling systems, and earlier carcass breaking should be in the best interests of all participants in the beef system. However, there is no need to change in any fundamental way the competitive marketing system for cattle and beef. Such changes as are required in the beef sector are in the areas of public and private stabilization policies and import controls, not in marketing arrangements.

Provincial hog marketing boards perform socially useful functions of benefit to all parties in the market place. They will and should continue to perform these functions, particularly those associated with increasing the efficiency of production and marketing, and those with a market development focus.

Three matters in hog marketing require further attention.

Now that the central selling system has proved itself over time, particularly in Ontario, the question might be posed whether it is still a fundamental prerequisite of the marketing system that all hogs must be sold through the boards, or whether this should no longer be compulsory, with individual hog producers having the option of undertaking direct transactions with meat packers.

In every province with a hog marketing board, the provincial government should ensure that all meat packers have equal competitive access to hogs in the

province and marketed through the provincial board. This has not always been the situation.

Western Canadian hog producers and processors are concerned about the shift in the location of hog production from the Prairies to Ontario and Quebec that has taken place over the past decade. Such changes in regional production are not a cause for public concern if they result from real shifts in comparative advantage and changes in regional supply and demand conditions. There can be little doubt that the increased profitability of Prairie grain production in the 1970s has been the major force in the shift to the east in Canadian hog production and slaughter. However, there is more than a suspicion that this relocation has been artificially stimulated by a combination of federal grain transportation and pricing policies, supply management programs that deflect the resources and rising productivity of Ontario and Quebec farmers into the production of uncontrolled commodities, and the provision in Quebec of subsidized capital and attractive stabilization programs. This is an aspect of regulatory impacts in the red meats sector that we have not been able to address in this study.

It will be seen that the authors favour the present marketing board system for hogs and beef and see the need for further intervention by government in the red meats sector in the form of an enriched margin stabilization program for hogs and beef and closer regulation of beef imports. However, we do not see a need for more fundamental changes in the marketing arrangements for either product. Specifically, we believe that Canada should not place these commodities under national marketing plans with supply management and formula pricing provisions. The results in the 25 per cent of Canadian output that is already covered by such regulatory arrangements (milk, eggs, and poultry meats) are too poor to encourage the expectation that this would be a cost-effective solution to problems in the red meats sector. Indeed, to place the further 35 per cent of Canadian agricultural output represented by red meats production under a similarly regulated regime would have fateful consequences for a sector which, though presently troubled, is one of the most productive and internationally competitive segments of the Canadian food system. And it would move national food policy a giant stride in entirely the wrong direction.

Part III

Responsible Regulation in the Food System

11 Supply Management as an Instrument of Farm and Food Policy

Supply management is a major regulatory tool in some present commodity programs and is being advanced as a possible component of future interventions in other commodity systems. Of all the income transfer and stabilization instruments in use in Canada, supply management techniques, especially when used in conjunction with cost of production pricing, are the most controversial. Now that the analytical material of the commodity case studies in Part II have been presented, it is appropriate to look at supply management in more detail and to provide recommendations on how the use of the technique should be changed.

Critics of supply management techniques charge they are used to hold aggregate output consistently below and price consistently above their long-run equilibrium levels so as to exploit the price inelastic properties of demand for raw farm products and, thereby, to increase, at the farm level, unit prices, aggregate gross and net revenues and the rate of return to farmer-provided resources. Further, there are objections to the use by farmers of marketing plans with supply management features to restrict to themselves the benefits of engaging in profitable lines of production at the expense of their fellow farmers.[1] In short, it is the predatory use of monopoly powers and the exclusionary practices of existing cartel members that are the contentious features of marketing plans with supply management provisions.

Yet the careless use of a two-word vocabulary – supply management – has tended to obscure the fact that agricultural control programs come in a variety of forms and are directed at a number of objectives.[2] The term has acquired a pejorative connotation by reason of an emphasis on the technique's negative features and its abuse, and a general neglect of its benevolent intents and results. To be precise on the latter matter, one should differentiate between the *positive* and the *extractive* intent and results of supply control practices. Supply management can be used:

- to prevent or correct an overcommitment of resources to agricultural production and the chronic and sustained depression of returns to resources;
- to impede sporadic or cyclical over- and underproduction, and to neutralize the adverse allocative and income distributional effects of uncontrolled biological variation and failures in the pricing system;
- to bring about a measured rate of expansion of capacity and production in line with the growth of effective demand at long-run competitive prices; and
- to promote more "orderly marketing" by controlling the rate of flow of product to market through time and the distribution of available supplies among geographic markets and alternative end uses.

When it is used for these purposes, farmers can claim with some justice that positive supply control is socially useful, in that it has the potential to provide long-run benefits to all participants in the food system, to the system as a whole, and to the Canadian economy. Any balanced view of supply management schemes must take these constructive contributions into account and, for milk and feathered products, many of these positive, nonextractive aspects of supply management have been achieved.

It is also as well to acknowledge here that supply management as an income transfer technique has characteristics that recommend it to governments and producers. From the point of view of governments, it is a technique that involves no direct expenditure. This is a major consideration in times of restraints on public taxation, borrowing, and spending. Furthermore, apart from the necessary regulatory processes, government authorities enjoy the further advantage of distancing themselves from detailed decision making on key variables and parameters, notably price. By the same token, farmers have a substantial measure of control over factors that are decisive to their economic well-being and are less

exposed to the uncertainties of political decision making. And, neglecting issues of equity and efficiency, from the perspectives of both parties, supply restriction is an effective mechanism for making the income transfers that are the intent of policy.

The Charges against Supply Management

What is at issue for the critics of supply management techniques is the way in which they have been used (or misused) in practice. The specific charges – examples of each which are contained in Part II – include the following:

- Producers have been permitted to use their monopoly power to set the prices of products well above their costs of production and thereby to extract substantial economic rents from the market. Consumers' expenditures have been correspondingly inflated and their welfare reduced.

- As used as an instrument for effecting income transfers to producers, it is inherently inflationary and regressive; the shelf-prices of the food products concerned are artificially raised and consumers are taxed in proportion to their food expenditures rather than their ability to pay.

- Contrived and sustained underproduction and underconsumption entails a dead weight welfare loss to society.

- There are additional welfare losses due to the inability to penetrate or hold foreign markets with prices established at higher-than-competitive levels. The producers and processors of the supply management commodities are locked into the undynamic domestic market and are forced into a "Fortress Canada" posture.[3]

- The manner in which supply management schemes are actually operated adds to the cost of production, and this upward shift in the industry supply function entails still further societal welfare losses. The sources of real cost increases to society are compliance costs, underutilization of facilities, inability of firms to achieve size economies, entrepreneurial lethargy, and over time, the capitalization of economic rents into the production costs of firms that purchase quota and, thus, into industry cost structures.

- The economic benefits created for the producers of the supply management commodities are ephemeral. They accrue only to the original group of producers who receive free allocation of quota. Thereafter, their successors must pay them for the right to produce and the extra returns are bid away in quota purchase costs.

- Not only do new entrants who have had to purchase quota therefore derive no benefits from the programs (unless they in turn are permitted to short the market still further and extract yet more consumer surplus), but worse yet, their real unit costs of production are increased and their competitive position is correspondingly eroded. Thus, first-generation benefits turn into burdensome second-generation costs.

- The necessity of purchasing quota from existing holders constitutes a substantial additional barrier to entry to young farmers, who are characteristically short of capital anyway.[4] In effect, there is an intergenerational transfer of income within agriculture, with new entrants being taxed in perpetuity by original quota holders. Furthermore, retiring sellers of quota remove from agriculture the capital sums they receive for their self-created property rights.

- The higher prices established in the domestic market by the supply management programs can only be protected from erosion by foreign suppliers through the erection of frontier barriers against imports of the supply management commodities and derivative processed products. While permissible under the General Agreement on Tariffs and Trade, this is inconsistent with Canada's avowed policy of promoting freer trade in farm and food products. Furthermore, to the extent that domestic production costs are artificially increased (or prevented from falling), trade barriers will have to be progressively raised over time to preserve the existing levels of benefits as competitors increase their productivity.

- In practice, supply management schemes have only been politically acceptable if the aggregate national quota was apportioned among the provinces on the basis of historic shares of national output. The resultant ossification of the regional pattern of production and the associated creation of distortions in interprovincial resource use and product flows has balkanized the national market and has damaged the essential substance and reality of the Canadian economic union.

- These negative results of supply management programs are the very antithesis of what governments say are their objectives for Canadian agriculture. Indeed, they cancel out part of the benefits that flow from government expenditures on other agricultural programs such as research, market development, and the provision of subsidized capital to farmers.

- Finally, there are a number of miscellaneous negative consequences of supply management programs. These include the loss of entrepreneurial freedom, the increased dependence of producers on

government (and the corollary, their greater vulnerability to policy changes), and the shifting of resources from the production of controlled to uncontrolled products with the consequential potential for adverse effects on the producers of the latter.

The litany of criticism is broadly supported by the empirical evidence presented in Part II in the commodity case studies on milk (especially fluid milk), eggs, and broiler chickens.

Helpful Policy Changes

The authors recommend the continued use of supply management as a regulatory tool in agriculture for two reasons. First, its abandonment flies in the face of revealed preference and is so implausible in political terms as to be irrelevant. Second, we are attracted by the constructive contributions (including stability and producer security features) of what we have termed "positive supply management" and believe it desirable to make every endeavour to retain them. However, it is clear that the practical use of supply management as an instrument of farm price and income support and stabilization policy leaves much to be desired. The challenge is therefore to identify needed and feasible changes to existing practice that will right its ills.

Six recommendations are made on ways in which the negative effects of supply management might be mitigated.

- Insofar as most of the problem identified above stems from supply management's use to generate unduly high prices to producers, the first priority and most potent step is to lower and/or contain these prices.

- The incurred costs of quota purchases and the imputed cost of quota holding should be rigorously excluded from formula pricing arrangements. At present, they may creep into formulas through interest charges.

- The real resource costs to society of producing any quantum of output should be minimized by making quotas fully transferable between producers, unattached to production facilities, at freely negotiated prices, and by raising the maximum amount of quota that may be held by any producer so as to capture more capacity and size economies. Over the long haul, this will hold down prices to consumers.

- If there is any political determination to preserve a genuinely national market for the regulated products, as well as a desire to allow a rising proportion of output to be produced in regions with a comparative advantage and to avoid interprovincial trade barriers and/or uneconomic interprovincial trade flows, then it is imperative that arrangements be introduced that would allow, over time, the reallocation of quotas between regions in response to changes in demand and production costs. The most direct way to do this would be to establish some type of national quota exchange mechanism. In principle, complete national negotiability of quota should apply to the existing provincial quotas, which were originally prorated according to historic provincial shares of national production. At a minimum, a national market mechanism for quota should be used to locate the new quota that will be available as market demand expands and as the amount of product demanded rises with lowered product prices. In practice, this change in quota allocation could not be implemented until, in the case of eggs, the gross pricing distortions between the various provinces are removed from the cost of production formula.

- Those provisions of the tax system that tend to raise the value of quota should be changed. Specifically, quota values should cease to be treated as "eligible capital property" under the Income Tax Act and interest paid on capital borrowed to buy quota should be disallowed as a business expense.

- The right of "first receivership" for competitive imports should continue to be denied to the marketing boards and, beyond that, import quotas should be set at levels that constrain the ability of the boards to enhance prices by restricting output.

Compensation[5]

Changes of the character and magnitude just described would entail reductions to producers in prices, in current profits, and in the capitalized value of future income streams. This must be so, since the case for change is founded precisely on the belief that, under present supply management programs, product prices are too high and profits too rich, and that quota values are merely the tangible evidence of this situation. This raises the issue of whether producers should be compensated for the capital losses in quota values that they would experience if policy changes in supply management arrangements resulted in lower levels of profitability.

The case for compensation has three main elements. First, realities mandate "political buy-outs" if change is to be wrought. Second, since governments created the policies that gave quotas a value, they are bound in justice to compensate producers if policy changes have an adverse effect on those values. And third, it is improper to confiscate a part of the wealth of recent entrants who have purchased production "rights."

The authors find the case against compensation more compelling for the following reasons. To compensate farmers would open up a Pandora's box for, once the compensation principle is established, there is no limit to the claimants on public funds from anyone who is adversely affected by changes in public policies. Farmers who have received free allocations of quota should not be compensated for the loss of an asset that took on value by reason of their monopolistic behaviour. There is no reason why the public at large should compensate late entrants who had to buy quota for a contrived "entrance tax" that was imposed upon them by their fellow producers. Those producers who have bought quota were entrepreneurs who knowingly gambled on the continuation of present policies. Noncompensation would have a salutary deterrent effect on others in agriculture (and elsewhere in the economy) who might be tempted to use regulation to create artificial property rights. It would be extraordinarily difficult, in practice, to design and administer an equitable compensation program, particularly in provinces where producers deny that quotas have value, where there is no market in quotas, where quota prices have been administratively manipulated, or where quota could only be purchased attached to production facilities. Finally, differences between provinces in unit quota values for each commodity would pose equity problems for a national compensation scheme.

If, despite the above considerations, it was deemed necessary and feasible to make compensation payments for reductions in quota values then, in the authors' view, they should be made only to those producers who have actually purchased quota, and not on quota that was received without payment when the supply management programs were introduced. Board and taxation records could provide proof of purchase and information on the size of the undepreciated balance.

Alternatively, if compensation were to be paid to all producers, then a case can be made for basing payments on a sliding scale, that is, with a higher level of unit compensation payments to small producers than to holders of large amounts of quota. The smaller firms would be induced to exit the industry. The larger businesses, which would remain in production, expand, and prosper at lower prices, could make up with expansion and cost reductions a good part of what they lost from noncompensation for part of the loss in value of their quota holdings. In any event, some upper limit on payments per producer would seem to be a political necessity. For without such a limit, payments to the very biggest producers would be so outlandishly large (several millions of dollars) as to provoke public outrage.

One final thought on the compensation issue. It was shown in Part II that, with a less regulated system for the production, pricing, and marketing of the supply management products (milk, eggs, and poultry meats), Canadian society would avoid a dead weight welfare loss from underconsumption and excess production costs of several hundreds of millions of dollars a year. It follows that Canadians could easily afford to pay the producers concerned quite generously *if* compensation is a politically necessary condition for a return to a less regulated and more market-oriented production and marketing system.

In important ways, the problems in the supply managed commodity systems are attributable to the use of the administered pricing techniques with which supply management is associated. Indeed, changing formula pricing arrangements may well be the key to producing more acceptable results from Canada's supply management systems. Accordingly, reform of cost of production pricing practices is the subject of the next chapter of this study.

12 Cost of Production Pricing in Canadian Agriculture

As time passes, an increasing proportion of Canada's agricultural output is coming under arrangements that set the aggregate net cash flow at the farm level and/or the unit prices of farm products by administrative decisions and formulas. Formula pricing is widely used in Canadian agriculture as a tool in price determination, income support, and market management.

As has been shown in Part II, formula pricing arrangements and objectives differ widely between commodities.

For some commodities, product prices are established in open markets and programs do no more than assure that the current year's aggregate net cash flow (aggregate cash receipts minus aggregate cash costs associated with those receipts) to producers for a designated group of commodities will not be less than the average of the previous five years. Such are the arrangements for the seven grains covered by the Western Grain Stabilization Act (WGSA). Similarly, for another group of products, prices are also established by market forces but, collectively, producers receive a minimum floor price that is not less than 90 per cent of the previous five years' market price, adjusted for changes in cash production cost. This is the essentials of the pricing arrangements for the named commodities under the amended Agricultural Stabilization Act (ASA). Effectively, the WGSA and the ASA guarantee, for producers of the commodities concerned as a whole, a proportion of the previous five years' market-determined margin over variable costs.

An intermediate position on the continuum is occupied by provincial arrangements for some fruits and vegetables, grapes, and tobacco, where extensive use is made of cost of production concepts and data by both first-buyers' and producers' marketing boards in negotiating commodity price minimums or targets.

At the other pole are the arrangements for the commodities covered by supply management programs. For these products, prices to producers are administratively determined at levels that are intended to cover farmers' expenditures per unit of output on variable inputs and general farm overhead items and to provide a negotiated return to their labour, management, and equity capital. Output is then limited to the amount of product demanded at these prices. Nationally, industrial milk and eggs and, provincially, fluid milk, broilers, and turkeys are priced fully or in part by formulas that are designed to cover "full costs of production including a fair level of producer remuneration."[1]

While much of what is said below is pertinent to all the above forms of formula pricing, the focus of attention is on "full cost of production pricing." As such, the emphasis is on the pricing procedures for the supply managed commodities.

The Advantages of Formula Pricing

The widespread use of formula pricing techniques is explicable by the advantages they offer to various participants in the food system.

Farmers see open market pricing as a system that provides them with unstable and often meagre rewards, and one that is aberrant in a modern economy in which "systems of cost-oriented product pricing and equity-oriented wage setting" prevail. Like other groups in society, farmers seek arrangements that will ensure them adequate returns, and that will permit them to defend their margins by passing through into product prices the inflationary pressures and specific input price increases to which they are exposed. Furthermore, formula pricing provides a technique by which commitments by governments with respect to product prices and producers' incomes can be effected automatically, thereby avoiding the need for continuous negotiation with governments and the uncertainties of annual decision making.

By the same token, under formula pricing systems, governments can minimize the administrative and political costs of establishing product price, which is the most important variable in policy formulation.

For their part, consumers have a long-term interest in arrangements that provide farmers with the returns needed to assure an adequate and stable food supply, and they seem comfortable with pricing systems in which product price increases can be related to identified and measurable factors, and over which there is some degree of public control.

Food industry participants past the farm gate have a known and relatively stable base price to which they can add their customary margins, and they may avoid interfirm price competition in procuring their raw product supplies.

Some Problems with Cost of Production Pricing[2]

In practice, the determination of the selling prices of farm products on the basis of their costs of production is beset by a host of technical, conceptual, and political difficulties.

Technical Problems

The technical problems of establishing the costs of producing an agricultural product include the following.

There are large differences in the conditions under which farm products are produced on the thousands of farms that engage in the production of each commodity. Consequently, unit costs of production vary widely between farms according to the incidence of such factors as size of enterprise, technology, location, operator efficiency, and the opportunity costs of the farmers' labour, management skills, and equity capital. It follows that the very notion of a single figure representing "the" average costs of production has little plausibility in agriculture.

Additionally, unit production costs vary from year to year due to sporadic weather effects on output and variation in the prices of such inputs as feed stuffs.

Farm production is also characterized by shared inputs, joint products, and multiple enterprises. This presents problems of partitioning costs.

There are also problems in ascribing values to inputs produced on the farm, such as feeds.

Further difficulties are caused by the fact that, in drawing data from farm accounts, the returns to resources of labour, management, entrepreneurship, and equity capital provided by the farmer are, in practice, a commingled residual return from all enterprises rather than an observable expense to one.

Add to this list the normal problems of choosing which accounting conventions to use in imputing the value of the current services of durable assets, in dealing with inflation, and in handling asset appreciation, and it will be apparent that there is exceptional scope for the play of judgmental factors, arbitrariness, and manipulation in determining the costs of producing any farm product.

Conceptual Problems

The most intractable conceptual problem with cost of production pricing is its built-in propensity to lead an upward spiral of calculated costs and derivative formula prices. This results from the fact that the costs of producing a commodity are partially dependent on the price at which it sells. Prices can influence costs in a variety of ways.

First, at the most mundane level, if prices are fixed at levels that cover the costs of a majority of producers and yield them adequate returns, then the forces that stimulate cost-reducing productivity gains are likely to be blunted.

Second, a cost-plus pricing system could lead simultaneously to less keeness in buying production requisites at advantageous prices and to opportunities for input suppliers to raise their asking prices.

Third, restricting output for the commodity group as a whole and for each of its member firms places constraints on the achievement of size economies in the long run, and it leads as well to increased unit costs when a fixed plant is operated at less than capacity rates in the short run.

A fourth source of induced cost increases derives from the appreciation in the value of production factors. Cost of production pricing has the threefold effects of tending to increase the income that is obtained over a period from the production of the commodities subject to such arrangements, lowering the variance of the income flows they generate, and reducing the risk of financial loss from engaging in their production. As is well known, such benefits quickly become capitalized into the value of assets in inelastic supply such as land, production facilities, and production of marketing quotas or "rights." If these assets are then included, consciously or unwittingly, at their higher values in cost of production formulas, then the calculated unit costs of production will be raised. To be sure, price will continue to equal costs, but at levels that are progressively ratcheted upward.

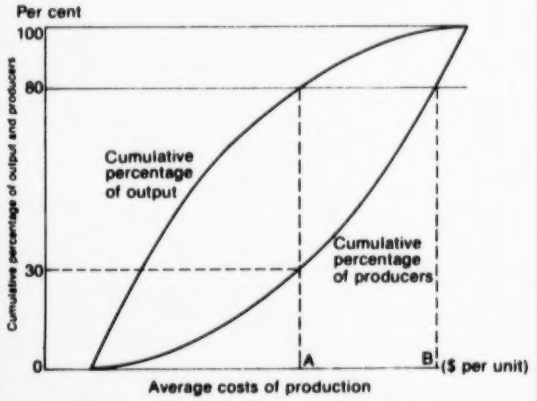
In short, if the cost of producing agricultural products *depends* on their prices, there must be some misgivings about using costs of production to *determine* prices.

Political Problems

The practical and conceptual issues identified above present policy makers with problems in devising and implementing formula pricing schemes in agriculture. But to these must be added a further set of problems that are essentially political in character. Three are of particular importance.

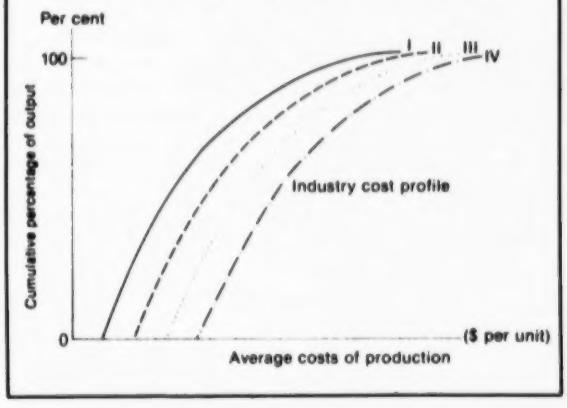
The first problem in establishing a price based on a cost of production formula for a particular commodity is to determine whose costs are to be covered. As mentioned earlier, unit costs of production for all regulated products vary widely between farms. Accordingly, in practice, governments have a good deal of discretion in determining a price that will cover "farmers' costs." Factors that could influence the decision include the numbers of producers it is desired to sustain in production, the proportion of consumption to be produced domestically, and the effects of unit price changes at the farm level on consumption and consumers' expenditures. Figure 12-1, which portrays the situation typically found in agriculture, will clarify the first two points. If it were desired to cover the full costs of production of 80 per cent of the producers (and bolster the incomes of the smallest, highest-cost, or poorest among them), price would have to be set at 0B. Conversely, if it were desired to use the price mechanism to encourage industry rationalization, and/or if it were judged sufficient to ensure that the costs of producing 80 per cent of industry output were fully recouped, it would be enough to set prices at 0A, although, at this price, only 30 per cent of the producers who accounted for 80 per cent of output would have their costs covered. The other 70 per cent of producers would be discontented with their lot; over time, no doubt, their numbers would be depleted.

Figure 12-1
Whose Costs to Cover?



A second and related issue is to decide which costs to cover and, in the case of the opportunity costs of resources provided by the farmer, at what rates. Thus, as Figure 12-2 illustrates, the inclusion in the costs of production of, say, quota values or marketing board levies and fees, or allowing farmers a 25 per cent return on their equity capital rather than 20 per cent, or calculating the array of average costs of production of a commodity group that is operating at 60 per cent of industry capacity rather than 100 per cent, would all shift the cumulative distribution from I to II. Furthermore, if a situation is allowed to develop in which prices ratchet costs upward as described above, then the cumulative distribution will shift progressively to the right (that is, to III and then to IV).

Figure 12-2
The Upward Ratcheting of Cost Structures



Finally, there is the problem of what might be called the political escalator that is built into cost of production estimates. This takes three forms. First, a significant proportion of producers are likely to be able to claim and to document that their costs are higher than the single figure for "the" average cost of production calculated. And producers with lower costs are unlikely to volunteer the fact that the formula-generated figure is too high. Consequently, governments are under continuous pressure from vocal and organized producers to revise the formula prices upward.

Second, the typical situation facing formula-priced commodities is the paucity of data on the level and distribution of actual costs incurred by the industry.

Such data as is available has often been collected for farm management or taxation purposes, and from a small, nonprobalistic group of diverse and multi-enterprise farms using a variety of accounting practices. Consequently, in many cases resort has to be made to the practice of synthesizing costs for "model" farms. There is usually little information available on how representative the "typical" farms being budgeted are of actual industry conditions. More pertinently, producers have a great deal of influence on the specification of input-output relations and factor prices for "reasonably efficient" operations, and they have much to gain from setting modest scale and performance standards for the bench-mark production unit. Nor are they inclined to underestimate the opportunity costs of their own resources. In these circumstances, there is a tendency for cost estimates to be biased upward, and it may be some considerable time before the availability of industry sample survey data (or escalating quota values) reveals that this situation exists.

Third, for some commodities, notably milk, cost of production pricing entails the annual adjustment of producer prices from some base level according to movements in a composite index that purports to show movements in production costs and that advances implicit margins in line with real incomes in the rest of the economy. In such instances, the potential for unwarranted increases in formula prices arises from two sources, the choice of a base year in which price-cost relationships were exceptionally favourable and the absence from the price adjustment index of any variable that would explicitly capture increases in on-farm productivity.

Formula Pricing in Canadian Agriculture

The salient features of formula pricing in Canadian agriculture (in the case of turkeys and broiler chickens (proposed)) are set out in Table 12-1.

It would be unwise and unfair to rush to categorical judgments on the results – both beneficial and malignant – of administered pricing in Canadian agriculture. In the first place, the technique is used with fundamentally different objectives and in different ways under the major "stabilization" programs (the ASA and the WGSA), on the one hand, and in commodity price support programs based on the cost of production, on the other.[3] Reservations are concentrated mainly on the latter. Second, it is not easy to differentiate between the results attributable to cost of production pricing as such and those more properly attributable to the administration of the supply management programs with which the technique is commonly, but not invariably, associated. Third, while milk has long been priced by formula, the experience with cost of production pricing for other commodities spans less than a decade and it takes time to discover and correct mistakes and excesses and to develop sophistication in the tool and among its users.

There is little doubt that most producers of commodities subject to cost of production pricing are well satisfied with the results. The returns to their resources have been generally satisfactory and, indeed, for some commodities, high by any reasonable standards. Economic conditions in the commodity subsectors involved have been more stable, more secure, and more assured than could possibly have been the case under the three obvious alternatives of open markets, vertically integrated systems, or discretionary political decision making.

Despite these observations, the present authors have concluded that cost of production pricing systems as presently operated in Canada are seriously flawed. This conclusion is supported by empirical evidence from the case studies on eggs, broiler chickens, and milk presented in Part II. To be precise on the matter, we believe that there is no question that prices have been set at too high levels for eggs and broiler chickens, for fluid milk in some jurisdictions, and nationally for manufacturing milk.

The evidence to support this categorical statement includes the height of the trade barriers that are required to sustain Canadian prices, the ability of producing units of modest size and technological and managerial ability to provide their operators with high returns to labour and invested capital, and the length of the queues and the intensity of the demand for the right to enter into production or to expand output of the commodities that are the subject of cost of production pricing arrangements. But the most weighty evidence that product prices are at unnecessarily high levels – "the smoking gun that cannot otherwise be explained" – is the extraordinary value that has become attached to production or marketing "rights" or to the land or facilities to which they are attached. A summary of the situation with respect to the unit quota values that had developed by 1978 is provided in Table 12-2 and in Figure 12-3.

Unit quota values vary by province – without exception they are highest in British Columbia – and their unit values have generally increased over time (Figure 12-3). In mid-1978, the aggregate value of all quotas was approximately $2 billion (Table 12-3). Since 1978, quota values have continued to rise and the aggregate value of quota very likely now exceeds $3 billion. We regard this as compelling evidence that

Table 12-1

Main Components and Approaches to Formula Pricing, Canada, April 1980

Component	Eggs	Turkeys (proposed)	Chicken (proposed)	Manufacturing milk	Fluid milk	Western Grains Stabilization Act	Farm income assurance (British Columbia)
Type of formula	National weighted average of regional or national costs, base point priced. Full cost.	Provincial or national weighted average, indexed to provincial/ national changes. Full cost.	Provincial weighted average, indexed to provincial/ national changes. Full cost.	National index of component cost items. Full cost.	Generally base price indexed to provincial/ regional price indexes. Full cost.	Guaranteed - 100 per cent of past five years for net cash flow in seven major crops.	Bargaining, federal department of Agriculture, and B.C. Ministry of Agriculture "model farm."
Jurisdiction of regulatory authority	National.	Proposed national. Presently, national supply management, provincial pricing.	Used provincially as a guide, proposed for national usage.	National - Canadian Dairy Commission.	Provincial.	Canadian Wheat Board area.	British Columbia.
Treatment of major variable input costs	National weighted average of provincial input prices.	Provincial input costs or price indexes, updated constantly.	Price indexes, indexed quarterly, except feed indexed weekly.	45 per cent of price determined by price index computed from 13 component items (feed, hired labour, etc.) 35 per cent of price on CPI.	Generally based on provincial/ regional component indexes and weightings (feed, CPI, etc.) (varies by province).	Actual expenditures during calendar year.	Bargaining on "model farm" basis.
Treatment of major fixed cost inputs	National weighted average, updated quarterly by indexes.	National weighted average, updated quarterly by indexes.	Provincial weighted average prices. Weighting scheme not clear.	Included as variable cost.	Generally included as variable cost.	Not paid, except interest payments on debt, taxes and other cash expenditures.	Bargaining on "model farm" basis.
Treatment of returns to owned resources, operator labour, and management	Return on capital employed at prime rate plus 1 per cent.	Return on capital employed at prime rate plus 2 per cent.	Return of capital employed at prime rate plus 1 per cent.	20 per cent of price based on judgment. Remains at 1975 level.	Generally only in judgmental cases. Otherwise included as variable cost.	Specifically excluded.	Bargaining on "model farm" basis except land payments based on imputed value on agricultural use.
Treatment of efficiency and productivity gains	Assumes efficiency equal to national average as determined in biennial sample survey.	Assumes efficiency equal to national average in sample survey.	Assumes efficiency equal to provincial average in sample survey.	Not treated specifically. Probably considered in judgmental discretion.	Not treated specifically. May be considered if judgment allowed.	Accounted for in data collected.	Not treated. Assume "model farm" efficient.
Measurement and updating procedures	Biennial survey by producer-funded consultant.	Triennial survey by producer-funded consultant.	Triennial survey by producer-funded consultant.	Indexed and adjusted quarterly. Re-evaluated 5 years (1975-80). Statistics Canada data.	Base prices seldom, if ever, overtly reviewed.	Yearly statistical survey of cash costs by Statistics Canada.	Little, if any, data collected specifically, systematically or scientifically.
Judgmental latitude allowed/used by regulators in passing on formula determined prices	Almost none.	Now used as monitoring device by provincial boards. Use not mandatory.	Now as monitoring device. Provincial boards use own pricing judgment.	20 per cent of price.	Varies by province from public hearings for change to automatic formula indexing.	Little if any.	Final arbiter is the Minister of Agriculture. Some latitude but strong producer group highly influential.

Table 12-2

Unit Quota Values, by Province, Mid-1978

	Fluid milk (per pound per day)	MSQ milk (per pound per year)	Eggs (per bird)	Chickens[1] (per pound)	Turkeys[1] (per pound)	Tobacco (per pound)
			(Dollars)			
Prince Edward Island	10.00	0	6.00[e]	n.q.	n.q.	
Nova Scotia	23.00	0	6.25	0.06	0.38[2]	
New Brunswick	22.00	0	8.00	0.05[2]	0.86	
Quebec	48.06	.075	10.00	0.25	0.67	
Ontario	16.00	.053	12.00	0.42	0.30	1.08
Manitoba	30.00[e]	.028[e]	5.00[e]	0.25[e]	0.38[e]	
Saskatchewan	30.00[e]	.028[e]	5.00[e]	0.06	0.38[e]	
Alberta	30.00	.028[2]	5.00[2]	0.25[2]	0.38[e]	
British Columbia	150.00	.15	21.00	0.63	1.52	

e Estimate for quota that was not independently transferable and had no specific price (typically tied to transfer with the farm); it is based on that for other provinces.
MSQ Market share quota.
n.q. No quota.
1 For quotas specified in square footage of floor space, the value per pound of chicken was calculated as 4.75 pounds per square feet, produced four times a year, for Ontario and 4.0 pounds four times a year for other provinces. For turkeys, a quota of 5.25 pounds per square feet per year was used.
2 Estimate derived from unpublished provincial sources.
SOURCE Brinkman, *Farm Incomes in Canada*, Table 3-19, p. 27.

Table 12-3

Aggregate Quota Value,[1] Canada by Province, Mid-1978

	Fluid milk	Industrial milk	Eggs	Chickens	Turkeys	Tobacco	Total
			(Millions of dollars)				
Prince Edward Island	1.0	0	0.7	-	-	-	1.8
Nova Scotia	14.6	0	4.9	1.8	1.3	-	22.6
New Brunswick	9.2	0	3.1	1.1	1.9	-	15.3
Quebec	171.7	359.8	30.2	69.3	31.5	-	662.5
Ontario	98.4	166.1	87.9	123.5	26.5	247.3	719.7
Manitoba	20.6	10.9	10.8	8.6	5.8	-	56.7
Saskatchewan	18.9	7.3	3.1	1.0	2.7	-	33.0
Alberta	41.0	18.8	7.0	18.3	5.8	-	90.9
British Columbia	262.4	46.5	49.7	57.3	24.9	-	440.8
Canada	637.8	609.4	197.4	304.4	100.4	247.3	2,043.3

1 Excluding that of commodities such as fruits and vegetables.
SOURCE Brinkman, *Farm Incomes in Canada*, Table 3-21, p. 28.

cost of production pricing arrangements are not only covering producers' operating and opportunity costs, but also are providing them with substantial economic rents.

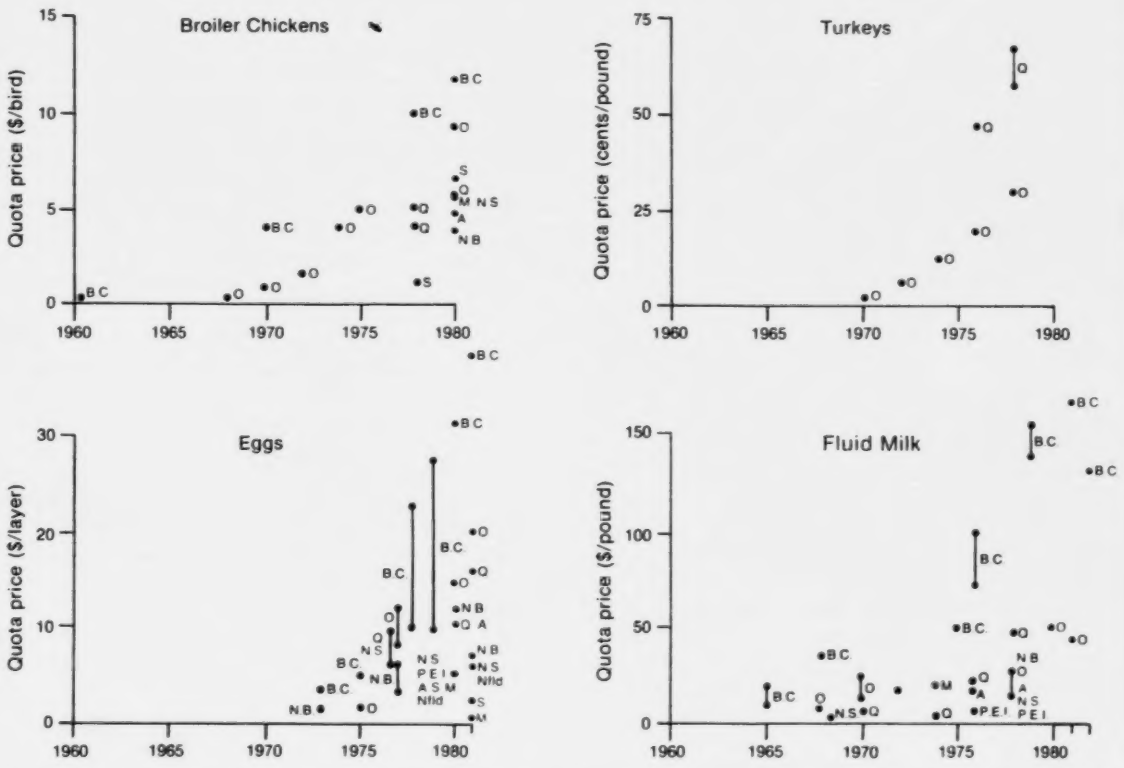
Reforming Cost of Production Pricing[4]

Formula pricing has much to offer as a regulatory tool and advocating its abandonment would be politically naive and quite possibly economically undesirable. Rather, eight ways in which the use of this economically defensible and politically preferred technique might be improved are identified below.

1/ *There should be greatly increased private and public investment in the provision of data about cost-revenue relationships in the regulated commodity subsectors.* The availability of actual industry data, obtained from regular surveys of statistically reliable samples of production units, and collected, published, and analysed on an open, consistent, and standardized basis, would have two advantages. First, such survey data would provide a credible alternative, or an important supplement, to the consensual bench-mark models, or base period conditions, that are now used in setting base and current period prices. Second, this data would permit improved monitoring of the general adequacy, and

Figure 12-3

Unit Quota Values for Broiler Chickens, Turkeys, Eggs, and Fluid Milk, 1960-82



SOURCE Canadian Federation of Agriculture, "Quotas," Ottawa, revised, 1979 (mimeographed); S. H. Lane and M.A. McGregor, *Quotas and Quota Values*, School of Agricultural Economics and Extension Education, Ontario, Agricultural College, University of Guelph, February 1979; Arcus Consulting Limited, "Farm-Gate Prices for Eggs in Canada," Report prepared for the National Farm Products Marketing Council, Vancouver, October 1981 (mimeographed); Arcus, "Broilers and Eggs;" personal interviews with producers and provincial and federal agriculture officials.

the distribution, of the returns to resources obtained from the prices emerging from the formulas.

2/ *The responsibility for conducting industry sample surveys, for determining and updating representative or bench-mark firm models, and for devising and operating methods of indexing product prices to current costs should be shifted from producers' organizations and on to departments of governments and/or the regulatory agencies.* The present practice in which the costs of production are established from data collected by consultants employed and supervised by the producer groups involved is too open to the charge that "producers are setting their own wages."

3/ *Producer groups, regulatory agencies, and governments should be much more explicit about the proportions of output and of producers whose costs it is intended to cover by the price level established for each product.* This would be much more satisfactory than the present situation in which the target standards of firm performance (and implicit remuneration) are described by such terms as "representative," "average," "reasonably efficient," "not inefficient," or "a typical family farm operation." Such terms are too opaque to serve as an evaluative standard for public policy objectives, or for policy performance monitoring.

4/ *The value of quotas and the effects attributable to quota management practices that increase operating costs should continue to be excluded from cost of production calculations.* To do otherwise would be a prescription for an ever-rising spiral of costs, prices

and capitalized rents, with grave consequences for consumers and the next generation of producers.

On the first point, to date, regulatory agencies have ostensibly declined to include in pricing formulas the very substantial real expenditures that have been made by producers who have purchased or rented production or marketing "rights" and the imputed reservation values that the first recipients place on the quotas they hold. Regulators will have to be even more resolute on this fundamental matter in the future as the proportion of aggregate quota that changes hands for money increases. Meantime, there is a suspicion that expenditures on quotas are beginning to creep into production cost calculations via, for instance, interest charges on funds borrowed for quota purchase and inflated estimates of necessary investments where quotas are attached to land or facilities.

On the second point, it hardly seems appropriate that prices should be automatically and fully increased if per unit costs of production are raised as a direct consequence of supply management programs themselves. This occurs where producing firms are unable to achieve optimum factor proportions or size economies, and are compelled to use fixed plant at less than capacity.

5/ *Regulatory agencies should be even more assiduous and rigorous in their monitoring, policing, and control of the operation of formula pricing arrangements.* In the past, there have been disturbing instances where producer marketing organizations were permitted to base cost estimates on low performance standards and to follow "creative accounting" practices and manipulative procedures that have resulted in product prices being set above reasonable levels and generating extravagantly high returns to resources.

6/ The above problem will no doubt diminish in the future as the quantity and quality of information about cost-revenue relationship in the regulated commodity subsectors improve, and with the growth of experience and sophistication among all participants in formula pricing arrangements. *Public confidence would be still further enhanced if all price changes had to have prior and explicit approval by regulatory agencies rather than be subject to confirmation only after appeal by some affected party. That is, statutory regulatory agencies (SRA's) should actively regulate rather than merely react when prompted.*

7/ *SRA's should report the effects of cost of production price changes in the universally accepted form of annual profit and loss statements and balance sheet changes for representative producers.* At present, cost of production prices are calculated and reported for a producer of representative size, for example, with 20,000 laying hens, and on a per unit basis, for example, so many cents per dozen. Per unit costs are a valuable managerial tool for producers, but annual profit and loss statements and balance sheets (and balance sheet changes) are universally accepted as the basic financial documents needed to analyse the financial results of business activity. We have never seen a SRA use these highly valued financial control devices in reporting their regulatory activities. Public confidence and understanding of cost of production regulation, and an increased awareness of the impact of their decisions by regulators, would be the natural result of requiring the evaluation and reporting of regulatory decisions to be made in these widely used and understood forms.

8/ The above seven recommendations involve more than "fine-tuning" of the present regulatory system. However, the authors believe that even more fundamental changes are necessary. We are concerned by the inflexibility with which formula pricing arrangements appear to have been used without due regard paid to the results that they produce. We therefore recommend further that *pricing formulas should be devised that include a wider range of variables, and which provide scope for more administrative discretion for regulators in their application.*

First and foremost, it would seem appropriate that pricing system administrators should take quota values into account. Some modest value to quotas is perhaps tolerable, but we believe that proposals for price increases should be disallowed when quota values reach levels that indicate the presence of excessive rents. Indeed, the "teeter totter" principle, under which administered price levels would be varied inversely with quota values, seems entirely defensible.

Second, it would be desirable to escape from the confines of cost of production concepts – which relate only to the supply side of the market – at least to the degree that some account was systematically taken of the effects of prices on consumption. This would avoid situations in which a formula-generated price increase reduces the amount demanded, which leads to a mandated reduction in capacity utilization, which adds to unit production costs, and triggers a further round of price-cost increases. This has been characterized as a "cycle of reverse progress" in which the industry shrinks (albeit that its members want the right to produce additional volume more than they want higher unit prices) and consumers become increasingly disaffected.

The third factor that needs incorporation into cost of production pricing systems is productivity. At

present, most pricing formulas and arrangements for adjusting current prices from base or immediately previous levels take no account of gains in productivity on the farm. They simply pass through increases (or decreases) in the prices of inputs without making allowance for improvements in the productivity with which those inputs are used. A notable exception is in egg pricing, where key production coefficients (such as feed conversion rates and rate of lay) are periodically re-established on the basis of sample survey and other data. Such practices should be more widespread. However, periodic surveys are too slow and too uncertain a means of detecting productivity gains (especially when they are the responsiblity of regulated producers themselves). Moreover, it is self-evidently just that some part of improvements in farm productivity should accrue to society at large in a falling need to underwrite the economic well-being of producers of regulated commodities and that some further part should accrue to consumers as falling real prices. The authors therefore recommend the automatic deduction of an annual factor for productivity improvements in the setting of current prices. This seems much more defensible than some current practice that appears to dispose towards productivity gains that go primarily to producers.

The above are nonmarginal changes in current practices in applying cost of production concepts that would raise public confidence in the approach and its results. It is encouraging to note that some of them are already being incorporated into the procedures for some commodities, or are being actively explored for others. Indeed, advocates of such changes are to be found in regulatory agencies,[5] departments of government, and, to their credit, in a few individual producer marketing boards and in the general farm organizations.

13 The Regulation of Marketing Boards

This penultimate chapter is concerned with recommending changes in the ways in which producers' marketing boards are regulated in Canada.

It can be argued that the creation and surveillance of producers' marketing boards already exhibit at least six of the essential features of responsible regulation.

First, there has probably been a more extended and intensive debate about marketing boards and their activities than about any other regulated industry in Canada. Second, all marketing boards are created under specific enabling legislation, and their powers are defined in marketing "plans" that receive explicit legislative approval and/or are delegated to them from the statutory regulatory agencies (SRA's) or under negotiated federal-provincial agreements. Third, SRA's, composed of crown appointees, and answerable through ministers of the crown to legislatures, are in place to ensure that boards exercise only the powers granted in the marketing plan and to supervise the translation of legislated mandates into operational policies. Fourth, extensive use is made of public hearings before marketing schemes are introduced or importantly amended, and enquiries and studies are initiated by the SRA's, by ministers, and by parliamentary committees when disaffection with particular aspects of board operations reaches critical levels. Fifth, appeals procedures to individual boards and to SRA's are supplemented by those available through the courts. Finally, statutory provision is often made for boards to have consultative and advisory committees, so that there are formal mechanisms through which those affected by marketing board decisions may make their separate and mutual interests and concerns known. In short, many of the basic procedures and mechanisms for securing responsible regulation are in place.

Despite the above, there has been recently a mounting wave of disaffection with the marketing board movement as a whole, with the results of the activities of particular boards, and with the regulatory process within which they operate. To be precise, discontent focuses on two main matters.

There is widespread discontent with the results of the activities of the supply management and price setting boards. These are perceived as having been permitted to use their considerable market power in ways that are not in the public interest, nor even in the long-run interests of the producers of the supply management commodities themselves. As discussed in Chapter 11, the charges levelled against these boards include, among others, that they have unduly enhanced consumer prices and provided excessive returns to farmers' resources; that they shelter the inefficient and stifle entrepreneurial initiative; that they add to the costs of production of present producers; that the capitalization of current rents into future costs is a burden on the next generation of producers; that the resultant erosion of competitiveness forces the commodity groups concerned into a "Fortress Canada" mind-set and an unexciting future; and, perhaps most damning of all, that these boards negate the very essence of Canada as a common market by economic balkanization of the country into a set of provincial submarkets.

The second area of discontent is with deficiencies in the regulatory process. Insofar as the SRA's have failed to prevent the excesses and malignancies cited above, they are culpable. More generally, it is charged that the SRA's have failed to balance the public interest and the specific interests of other participants in the food system against those of producers.

Both issues – the undesirable features of the programs of the supply management and cost of production pricing boards and imperfections in the regulatory process – need attention. This is partly because of the importance of these matters in their own right. But they must also be resolved because of the imperatives of restoring public confidence is the very concept of the marketing board as a legitimate and socially useful institutional arrangement for farmers to employ in the market place and for governments to use as an instrument of public policy. For we foresee a danger that the marketing board movement as a whole may be brought into disrepute,

that the numerous beneficial things that they accomplish may be placed in jeopardy by public intolerance of the continued disbenefits and excesses of the few. Public perception of an endemic failure to ensure that marketing boards serve the public as well as the particular interest will assure their demise.

Regulatory Reform

The general features of a "good" regulatory process have been well identified in the literature and have commanded wide acceptance.[1] There is little purpose to be served by repeating them here, for it is self-evident that such issues as SRA composition and mandate, open and informed decision making, procedural fairness, and accountability are just as pertinent to the effective regulation of agricultural marketing boards as to any other institution or sector. Rather recommendations are made on ten specific areas in which the regulation of agricultural marketing boards could be improved in ways that could help avoid the unfortunate results of the past and restore public confidence for the future.

Most of the recommendations that are spelled out in the following paragraphs apply to such SRA's as the National Farm Products Marketing Council (NFPMC) and the provincial regulatory "super-boards," councils, or commissions. However, the first recommendation is directed at commodity marketing boards themselves.

1/ *Commodity marketing boards should have a significant proportion (say one-quarter) of their membership composed of independent appointees charged with the task of identifying and representing the public interest.* This is a practice in other countries where statutory agricultural marketing monopolies have been created, and a token gesture has been made in this direction in Canada in respect of the national marketing agencies for eggs and poultry meats. Boards that have nothing to hide have nothing to fear and much to gain from the application of this principle.

The composition of the SRAs is an issue of far greater importance.

2/ *Members of the SRA's should be unequivocally impartial. Indeed, a majority should be public interest representatives with the balance being composed of producers, consumers, processors, and traders.*[2]

The credibility of regulation is flawed from the outset when the law requires, or practice results in, a majority of the members of the SRA's being drawn directly from the regulated sectors or being known to be partisan advocates of farmers' interest. Such, respectively, is the requirement under the Farm Products Marketing Agencies Act and the custom in almost all provincial jurisdictions. Furthermore, in operating terms, situations should not be allowed to develop in which members representing a particular interest, or full-time members, have unequal access to information and unequal influence on decision making. Additionally, at the federal level, *it seems totally inappropriate that the NFPMC should be a signatory of the plans it is required to surpervise* as this puts on the Council the unfair burden of being judge and defendant in the same action.

The third recommendation is related and it has two components. It is concerned with the organizational and jurisdictional aspects of regulation – that is, with the balance between the SRA's advisory, policy-making, and adjudicative roles – and with the degree of independence that SRA's should have with respect to the influence of ministers.

3a/ *It is appropriate to distance the SRA's from appeals against decisions in which they were involved.* Precisely on this point, we applaud the step taken in Ontario whereby a separate and independent Farm Products Appeals Tribunal has been established to adjudicate on appeals by persons or groups aggrieved by regulations and decisions of producer boards. Such actions frequently will have been evolved in consultation with SRA's and received that latter's authorization. It is neither good regulatory practice, good judicial practice, nor fair to the original decision makers to require them to sit in judgment on themselves.

3b/ *Statutory regulatory agencies should be impartial bodies operating more under precise legislative and cabinet direction and less under ministerial influence than is presently the case.* If the SRA's were not dominated by producer members, or if they were less biased towards their interests and were seen to be regulating in the public interest, the public at large would not be as concerned as they are now by the present "proximity" of the SRA's to ministers of Agriculture.

However, for the above situation to obtain, a fourth recommendation is made.

4/ *It is imperative that the objectives of regulation be made explicit.* At present, they are woefully imprecise. In this situation, an unfair burden of interpreting their mandate is placed on the SRA's, and there is only a weak basis for the SRA's or others to evaluate their performance and to measure progress towards their defined regulatory goals. In this context, the issuance to the NFPMC by the federal minister of Agriculture in January 1979 of a policy directive on how the Council should supervise and regulate the national marketing boards is a most constructive precedent, and one that is worth extending.[3] This important directive made it clear to the NFPMC that it

was to ensure that board activities served consumer and processor interests as well as those of farmers, and it reaffirmed that the Council's mandate included the promotion of the strength, efficiency, and competitiveness of the production and marketing system. To make the point explicitly, the evidence is unequivocal that SRA's are overly biased towards producers' interests and are functioning mainly as rate-setting bureaus. If public confidence in them is to be enhanced, it is imperative that they reorder their priorities. This leads to the fifth recommendation.

5/ *SRA's must be more concerned with market development and reform and less with rate setting, and they must be seen to be as assiduous in serving other system interests as they have been in advancing farmers' interests.* Of course, the rate-setting or pricing activities of the boards and the monitoring and control of these by the SRA's will remain central, and to the extent that some SRA's have acquiesced to undue price enhancement for the regulated products this is the most tangible evidence of regulatory failure. In our judgment, the implementation of the sixth recommendation would be more potent in restoring confidence in the regulation of marketing boards than any other single change for the future.

6/ *SRA's should ensure that prices for the supply management commodities are no higher than required to provide producers of defined, acceptable, and rising standards of efficiency with normal profits.* In order to ensure that prices are set at appropriate levels, however, it will be necessary for the SRA's to have access to comprehensive information on the levels, composition, and distribution of the costs and benefits of producing the products concerned. This they do not now have. And this, in turn, is but one instance of a more pervasive characteristic of the regulation of marketing boards at present – the paucity of relevant technical and economic information about the commodity subsectors they regulate that is available to the SRA's when making their regulatory decisions. The informational content of decision making on a range of pivotal issues is alarmingly deficient and urgently needs strengthening.

7/ *To up-grade the informational content of SRA's decision making, their in-house research and analytical capability should be expanded, more use should be made of research staffs of departments of government, and studies should be commissioned from independent research agencies by the SRA's.*

This recommendation goes hand in glove with the next.

8/ *SRA's should be more assiduous in making account to the public of their decisions and the implications of such decisions for all interested parties.* Public accountability is recognized as a crucial feature of the regulatory process and, in this area too, SRA's for agricultural marketing boards come up short. In particular, it is not common for SRA's to publish advance schedules of decision dates, to actively solicit submissions from, and encourage advance dialogue with, interested nonproducer parties, nor do they accord the latter full, free, and timely access to relevant information. Furthermore, the SRA's for agricultural marketing boards typically do not provide written accounts of their decisions with details of the options considered and their characteristics, and justification of their choice. Nor do they publish assessments of the positive and negative allocative and distributive impacts of the courses chosen. To cite the situation is to identify the remedy. It is further recommended that the SRA's conduct regular evaluations of the marketing schemes they supervise and publish quarterly analytical reviews of all the changes in provisions and regulations that have been dealt with in the marketing plans for which they are responsible. Additionally, their annual reports to Parliament and to provincial legislatures should not be as they are at present – slender, descriptively statistical, and agnostic – but documents of substantive fact and issue that could provide the spark and the basis for vigorous and informed parliamentary and public debate on board policies and impacts.

9/ *SRA's and their commodity boards should allow full, free, and timely access to all relative regulatory information.* Access to relevant information is the prerequisite to informed policy discussion and decision. Without access to the information used in arriving at regulatory decisions informed evaluation and discussion is not possible, nor should confidence by the public in these decisions be expected. Producer marketing boards and SRA's alike cannot and should not be treated as private individuals regarding information disclosure since they are bodies created by the public and responsible to the public for their actions. For instance, information used in the design and up-dating of cost of production formulas, which must be gathered from individuals, should be privileged only to the extent that the identity of the individual is erased. The content of these types of data bases are critical to the design of regulatory activities and evaluation of their allocative and distributional impacts.

10/ *There is a need for formal, independent monitoring of regulated agricultural markets.* Because, in the final analysis, "the purpose of production is consumption," a higher priority should be attached to the consumer interest. To this end, the British practice of having an independent Consumers' Committee advise Parliament on the impacts of marketing

schemes on consumers should be examined. Secondly, while Bill C-42[4] may have gone too far in superimposing a second supervisory layer on boards that could be adequately regulated under existing legislation and by providing for the use of the courts to challenge the boards for conduct that Parliament had otherwise sanctioned, nonetheless, the other provisions of Bill C-42 that would have applied to agricultural marketing boards had merit. In particular, *the proposal that a Competition Policy Advocate should cause enquiries to be carried out, should be a party of record with respect to the activities of national agricultural marketing agencies, and should make representations at public hearings into matters pertaining to agricultural marketing schemes should be implemented.* This step also would further help to redress the imbalance between producer and other interests, institutionalize the influence and responsibility of departments of government other than agriculture and, together with the other changes recommended above, advance the time when agricultural marketing boards will be perceived as a fully accepted institutional arrangement, widely respected for the constructive contributions they make to the attainment of a national food strategy for Canada.

14 Conclusions

Our assigned task in this study is to examine economic intervention and regulation in agriculture with particular reference to governmental objectives for the agricultural sector and the food system overall, and to the impact of marketing boards. This we have done, and our conclusions are reported below. First, however, four caveats.

It should be said explicitly that there are ways of assisting farmers and helping the agricultural and food system to reach its potential that do not require the creation of statutory producers' marketing monopolies, still less those with supply management powers and formula pricing arrangements. Transfer payments to support and stabilize producers' incomes or to stimulate output could be made directly through the taxation-expenditure system. Enduring competitive efficiency and self-sustaining viability could be fostered by productivity enhancement, resource development, and adjustment assistance programs. And the expansion of markets, the improvement of their operational and pricing efficiency, and the correction of disparities in bargaining power within them could be pursued through market development programs, commercial policy, competition policy, industry-wide reorganization commissions, and voluntary producers' marketing cooperatives. We have not explored this alternative set of programs in this study, not because of their lack of appeal or our lack of conviction, but because, in the context of the study of *responsible regulation*, we have judged it more fruitful, initially, to identify avenues for *reform* in the policies, processes, and instruments that are presently used in the economic regulation of agriculture. Furthermore, we are persuaded that price and income support and stabilization-oriented commodity policies, marketing boards, supply management programs, and formula pricing techniques can all find a constructive and enduring place in Canadian farm and food policy provided their use is changed in ways that entail smaller allocative wastes, less contentious income transfers, and fewer rigidities in the short run, and fewer hazards for the food system, and for the nation, in the longer term.

It is appropriate to stress secondly that this enquiry focuses on one aspect of government intervention in agriculture. A very large part of government activity in the sector is concerned with such matters as research and extension, plant and animal health, food standards and safety, resource supply, taxation and credit, and regional, market, and industry development. Such interventions command wide public support though, for all anyone knows, their allocative and distributional effects may be quite as large as the commodity and marketing board programs examined in this study. We are aware that the limited mandate of this enquiry may dispose towards a partial and unbalanced view of overall government involvement in the Canadian food system.

Budget limitations prevent our pursuing the research into those aspects of economic regulation that we *have* examined to the depth that we would have wished and, indeed, that is required. As a result, the empirical results presented in this study should be regarded as showing directions and orders of magnitude rather than being definitive statements. In addition, whole areas of pertinent enquiry – such as the vertical effects of farm programs on other food system participants,[1] the interactions between commodity programs, and the regional dimensions of agricultural policies – received less attention than they deserve. Even so, the empirical results provided by the commodity specialists and others who joined us in this research enterprise are sufficiently wide-ranging and robust to illustrate some fundamental issues in farm and food policy in Canada.

Before passing to these issues, it is as well to state, fourthly, that we believe the Canadian food system is performing quite well. It is a growth sector. Most participants are well rewarded. Consumers have access to an abundant, varied, and safe food supply and are able to satisfy their needs with a relatively small and declining proportion of their disposable incomes. Exports of farm and food products are an important source of foreign exchange earnings, and Canada is using its agricultural abundance to meet, on both commercial and concessional terms, a

significant part of the rising demand for food that exists in countries that are less well endowed with food resources. Moreover, as we stress in the body of the report, it may be said of the protection/income transfer/stabilization programs with which we deal that they are modest by international standards, have many constructive features, and are designed to achieve multiple objectives that enjoy wide public support. And while some of them may at this date appear misguided, unbalanced, and cost-ineffective, their earlier introduction was motivated by the desire to combat very real economic and social problems in agriculture, in the food system and in rural society.

Notwithstanding this, in the areas of government intervention in agriculture that we have examined, we have uncovered several worrisome features of contemporary policy and its drift. The reservations we have discussed about specific commodity policies, and our suggestions for alternatives, are not repeated here. Rather, we identify in this concluding section ten issues of agricultural and food policy that this enquiry has suggested are of overarching importance, and require public examination.

First, economic regulation is most highly developed in the feather commodities and the dairy industry and it is here that the results of intervention are least acceptable. By any standards, the income transfers being made every year to producers of eggs and broiler chickens – and probably turkeys – are unconscionable. The transfers to producers of fluid and industrial milk are smaller on a per capita basis but, in total, are huge. Furthermore, these transfers are being made by cost-ineffective and socially regressive instruments, and with no time scale to their duration. The transfers to the producers of these commodities need to be lowered and policies need to be put in place that will eventually terminate the need for them.

Second, the above commodity subsystems – more particularly eggs and chickens – throw important light upon the practical use of supply management as a regulatory technique. While the use of supply management is well intentioned and holds out some promise of correcting for market failures and achieving important social objectives, we have concluded that the abuse of the supply management programs has got dangerously out of hand. The concern is not only – or even primarily – with the size of the income transfers that present producers are now being allowed to effect. Rather the alarm should be with the melancholy future facing the next group of producers who will take over these supply managed subsystems. For while the industries are flushed with profit in this generation, they will be burdened with costs in the next. Furthermore, the supply management schemes are adding to the ever-present centrifugal forces that threaten to weaken Canada as an economic union, and as a nation, by dividing the national market into a set of provincial submarkets.[2]

Our third conclusion then is that proposals to extend supply management programs to other parts of Canadian agriculture, and specifically to red meats, should be steadfastly resisted until we have learned to use supply management techniques in ways that are less prone to abuse in the short term, and less of a threat in the longer term to Canada, and to farmers themselves.

The fourth issue of concern is the use of the formula pricing techniques that are an integral part of the supply management programs. Current practice in this area is also flawed as is evidenced by the economic results it is producing. Fortunately, a remedy is readily at hand, namely the use of quota values as a price management tool. In our judgment, no other step would be more potent in ensuring that more defensible results flow from formula pricing arrangements than to make product prices vary inversely with quota values.[3]

A fifth area requiring attention is the manifest failure of the regulation of statutory monopolies in Canadian agriculture as is evidenced by the existence and persistence of abuses and indefensible results in that part of economic intervention in agriculture that entails supply management and administered price setting. The record shows that the statutory regulatory agencies have been hindered by imprecise mandates and inadequate authority. But they have also been reluctant to advise ministers and the public of the development of unwarranted results or to exercise the powers they possess to set aside the producer board decisions that give rise to such results. In some cases, statutory regulatory agencies have surrendered their powers to, been captured by, or drawn their membership from, the very groups they were supposed to regulate. Small wonder that the results have been so unsatisfactory for all except farmers. It would seem imperative that the composition of the SRA's be changed to provide a different balance between the interests of farmers, other food system participants, and the national interest; that they operate under more precise and statutory direction; and that they be less concerned with rate setting and protection of the status quo and more with improving industry efficiency, fostering reorganization, and promoting development and growth.

The sixth issue requiring emphasis is the pivotal position of western grains policy in Canadian farm and food policy. The matter has two dimensions, the development of our export potential and the interface between the western grains sector and the rest of

Canadian agriculture. Canada is highly competitive in international grain markets and the long-term market prospects for grain exports are bright. However, production and export performance have not lived up to their potential in recent years and there are doubts about whether market opportunities can be seized in the years ahead. "Missing the boat" would have adverse consequences for the well-being of Prairie agriculture, national prosperity, and interregional harmony. Additionally, failure to expand grain exports threatens to turn rising western agricultural productive capacity inward on the national market and produce downward pressure on farm prices and incomes throughout Canada, and for both crop and livestock products. At the same time, world grain demand, while growing, is inherently unstable. Consequently, there is a need for arrangements that will cope with economic instability in the western grain sector and prevent this instability spilling over into crop and animal agriculture throughout the country. These are areas where there is a clear need for multidimensional public interventions. The elements include: expanding production capacity; encouraging the product mix required by markets; upgrading the grain handling, storage, and transportation system; integrating grain transportation into a broader commodity transportation policy; getting the right balance between the regulation that must attend the use of a limited and linear transportation system, equity of access as a dominant policy determinant, and the use of price signals to provide incentives for that system's more efficient use; devising price and income stabilization arrangements that will offset short-term market variations and encourage steady grain production and the orderly development of livestock and meat production; and avoidance of distortions in interregional comparative advantages.

Some progress has been made in recent years on some aspects of this set of interdependent issues. The expansion of the hopper fleet and terminal space, the enactment of the Western Grain Stabilization Act, changes in feed grain pricing and marketing, are all notable accomplishments. But much remains to be done. Resolution of "the Crow" issue is crucial. So too is the creation of an environment and mechanisms that will foster a co-operative search for practical solutions to mutual and interrelated problems, and discourage the fractious rivalries between and among public and private agencies that seem so often to paralyse action. But perhaps the largest challenge facing governments is that of moulding the bits and pieces of grain policies and programs into a synergistic whole. For while flaws in any one portion of the present production-marketing system and the policy mix are not terribly constraining or costly in and of themselves, their interactions combine to create a huge aggregate direct and indirect cost, which need not continue.

Seventh, a good deal of attention needs to be given to the growing economic instability within agriculture, and in the food system as a whole. All the signs point to a continuation in the 1980s of the turbulence in world grain markets that was experienced in the 1970s. Unstable grain markets translate into instabilities in output, costs and margins in animal agriculture. The commercial sector of agriculture – the small proportion of farms that produces the bulk of agricultural output – is increasingly vulnerable to market and cost instabilities because of its growing dependence on purchased inputs and borrowed capital. Intervention in farming to enhance stability in the food system as a whole seems to us to be a defensible justification for economic regulation in the sector. The problem is to know how to do it! At one extreme, the Agricultural Stabilization Act seems to have too little influence on stability while, at the other, supply management and formula pricing systems appear to have achieved stability at the farm level at too high a cost in terms of efficiency losses and hard-to-defend income redistributions. A major task facing Canadian policy would seem to be to devise a set of instruments that will stabilize key economic variables in agriculture while resisting the temptation to move into regulated systems that isolate the Canadian food system from competitive market conditions. As Josling cautions – and as the Canadian arrangements for pricing, producing, and marketing the feather commodities and milk attest – "stabilization around responsive trends can increase production efficiency: isolation from such trends builds up trouble and makes eventual adaptation much more costly."[4]

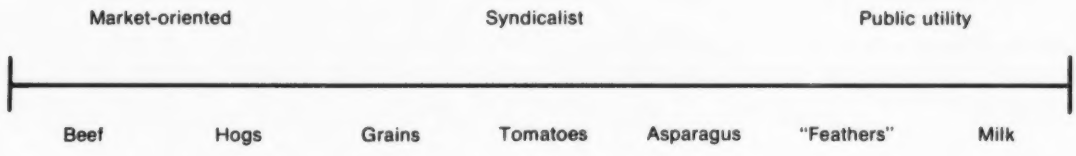
Eight, we are seized by the implications for "farm" policy of the heterogeneous structure of agriculture. Such heterogeneity precludes a uniform approach to the very different circumstances and needs of farms of different sizes and types. Rather, it mandates a high degree of selectivity, wherein differentiated sets of programs are tailored to meet the needs of specific target groups within agriculture. Acknowledgment of the structural realities of farming would tend to make economic regulation in agriculture less concerned with protection, income transfers, and the fostering of anti-competitive structures and behaviour, and place more emphasis on productivity enhancement, assisted structural adaptation, and market development. It would have the added advantage of decelerating the "economic cannibalism," the separation of land ownership and operation, and the drift towards tenancy that are now occurring in Canadian agriculture, in no small part as a result of the benefits of

current programs accruing primarily to the larger farms.[5] Furthermore, ceasing to pretend that agriculture is a homogeneous monolith would tend to make farm and food policy markedly less "agrarian." For the operators of the smaller farms are already more dependent for their economic well-being on the opportunities for earnings from nonfarm jobs than they are on economic conditions in agriculture, while commercial farmers are more dependent upon sound macroeconomic policy than they are on farm policy. Increasingly in the years ahead, Canada's commercial farmers will find much more relevance in inflationary trends, interest rates, currency values, and the rate of growth of demand at home and abroad than they will in the parameters of national farm programs.

The ninth area where much remains to be done is in the process of formulating policy for the farm and food sector. Although much improved in recent years, there are still alarming deficiencies. The tilt of policy is still predominantly towards the farming component of the sector. There is unequal access for other legitimate stakeholders in the process. There is no firmly established institutional manifestation of the commitment to "food policy." And the informational content of policy making needs to be substantially increased; more work of the type attempted here is needed and, preferably, it should be jointly sponsored and conducted by all food industry participants and a variety of interested "loyal intellectual oppositions."

Finally, as this study proceeded, it became apparent to the authors that the issue which lies at the heart of this examination of regulation in agriculture is "what kind of agricultural industry do we want in Canada?" The spectrum of arrangements for producing and pricing the individual products examined in this study is suggested by Figure 14-1. They range all the way from predominantly market-oriented systems, through cartel-like arrangements that have all the features of medieval guilds, to commodity systems that are akin to privately owned but publicly regulated utilities. We are bound to say that we view the drift from competitive systems, via creeping syndicalism, towards public regulation with deep foreboding. For, on the evidence provided by this enquiry, we find it impossible to believe that such a trend is in the best interest of the nation or, ultimately, of this and future generations of Canadian farmers.

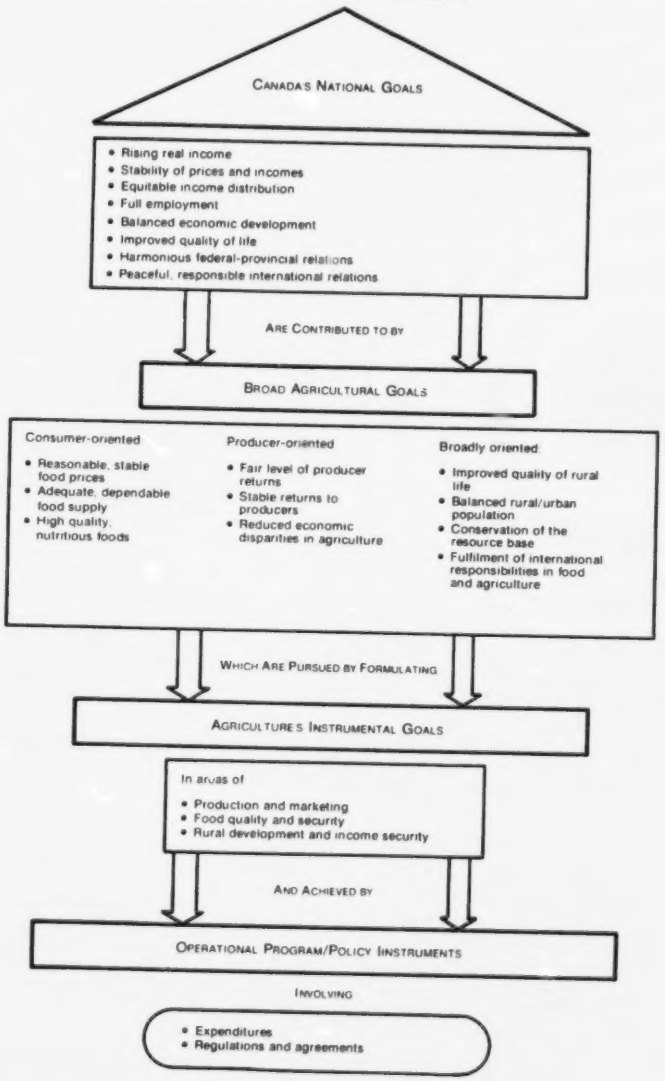
Figure 14-1
What Kind of Agriculture?



Appendixes

A Canada's Food and Farm Goals

Figure A-1
The Hierarchy of Canada's National and Agricultural Goals


CANADA'S NATIONAL GOALS
• Rising real income
• Stability of prices and incomes
• Equitable income distribution
• Full employment
• Balanced economic development
• Improved quality of life
• Harmonious federal-provincial relations
• Peaceful, responsible international relations
ARE CONTRIBUTED TO BY
BROAD AGRICULTURAL GOALS
Consumer-oriented
• Reasonable, stable food prices
• Adequate, dependable food supply
• High quality, nutritious foods
Producer-oriented
• Fair level of producer returns
• Stable returns to producers
• Reduced economic disparities in agriculture
Broadly oriented
• Improved quality of rural life
• Balanced rural/urban population
• Conservation of the resource base
• Fulfilment of international responsibilities in food and agriculture
WHICH ARE PURSUED BY FORMULATING
AGRICULTURE'S INSTRUMENTAL GOALS
In areas of
• Production and marketing
• Food quality and security
• Rural development and income security
AND ACHIEVED BY
OPERATIONAL PROGRAM/POLICY INSTRUMENTS
INVOLVING
• Expenditures
• Regulations and agreements

SOURCE Agriculture Canada, *Orientation of Canadian Agriculture: A Task Force Report*, vol. 2, Ottawa, 1977, p. 11

Figure A-2

Contribution of Agricultural Goals to National Goals

	National goals							
Agricultural goals	Rising real income	Stability of prices and incomes	Equitable income distribution	Full employment	Balanced economic development	Improved quality of life	Harmonious federal-provincial relations	Peaceful, responsible international relations
Consumer-oriented								
Reasonable, stable food prices	++	++	+		-			-
Adequate, dependable food prices		++		+	+			+
High quality, nutritious food						++		
Producer-oriented								
Fair level of producer returns	++		+				+	
Stable returns to producers	+	++			+	+		-
Reduced economic disparities in agriculture			++	+	++		+	
Broadly-oriented								
Improved quality of rural life					+	++		
Balanced rural/urban population	-				++	++	+	
Conservation of the resource base		+			++	++		
Fulfilment of international responsibilities in food agriculture	-					+		++

NOTE Each entry reflects judgments about the extent to which achievement of national goals is influenced by progress towards goals for agriculture: minus sign (negative impact); blank (negligible); plus sign (positive); double plus signs (large positive).

SOURCE Agriculture Canada, *Orientation of Canadian Agriculture*, vol. 2, p. 12

Figure A-3

Contribution of Instrumental Goals to Agricultural Goals

	Agricultural goals									
	Consumer-oriented			Producer-oriented			Broadly-oriented			
Instrumental goals	Reasonable, stable food prices	Adequate, dependable food supply	High quality nutritious food	Fair level of producer returns	Stable returns to producers	Reduced economic disparities	Improved quality of rural life	Balanced rural/ urban population	Conservation of the resource base	Fulfilment of international responsibilities
Production and marketing										
Efficient production	++	+	+		+					
Efficient marketing	++	+	+							
Effective resource management	+	+		±		+	±	-	++	
Market development		+		++	+			±		
Effective food and technical aid				+	+					++
Food quality and security										
Nutritious food for all Canadians	++		+	+						
Informed food consumers	+		++							
High commodity standards			++	+						
Diversification of production	-	++			+				+	
Security of imported supplies	±	++								+
Rural development and income security										
Increased producer bargaining power	±			++	+	+	±			
Stability of producer returns	±	++		+	++					±
Viable farm units				+		+	++	++		
Rural community development	+			+		+	++	++		

NOTE Each entry reflects judgments about the extent to which the achievement of agricultural goals is influenced by progress towards the related instrumental goals: minus sign (negative impact); blank (negligible); plus sign (positive); double plus signs (large positive). Plus and minus entries in the same entry indicate that the instrumental goal can be achieved in several ways, one or more of which can have a negative impact on the relevant agricultural goal.

SOURCE Agriculture Canada, *Orientation of Canadian Agriculture*, vol. 2, p. 23.

Figure A-4

Contribution of Program and Policy Instruments to Instrumental Goals

	Instrumental goals													
	Production and marketing					Food quality and security					Rural development and agricultural income security			
Program/policy categories	Efficient production	Efficient marketing	Effective resource management	Market development	Effective food and technical aid	Nutritious food for all Canadians	Informed food consumers	High commodity standards	Diversification of production	Security of imported supplies	Increased producer bargaining power	Stability of producer returns	Viable farm units	Rural community development
Direct payment through commodity programs			-			++			+			+	+	+
Direct payment through social programs	+						+						+	++
Crop insurance subsidy	+										+	++	++	
Assistance in producer financing	+		++								+	+		
Storage and freight assistance		+		++					+					+
Research programs	++			+	+			+						
Extension and information services	++		+	+		+	++	+			+	+	+	+
Testing services	+	+		+			+	++						
Technical and food aid				-	++ +	+						+		
Trade promotion				++					+					
Rural economic development	+	+								+	+			
Administrative activities														
Instruments														
Trade and tariff measures	-	-		+					+	+		+		
Transport rates and regulations		-							-					+
Competition laws	±	±							+		+	+		
Administration of commodity markets	-	+		+							+	+		
Tax laws			+									+	+	
Health standards and labelling						+	+	+						
Labour market and immigration rules			+											
Land use decisions														+

SOURCE Agriculture Canada, *Orientation of Canadian Agriculture*, vol. 2, p. 33.

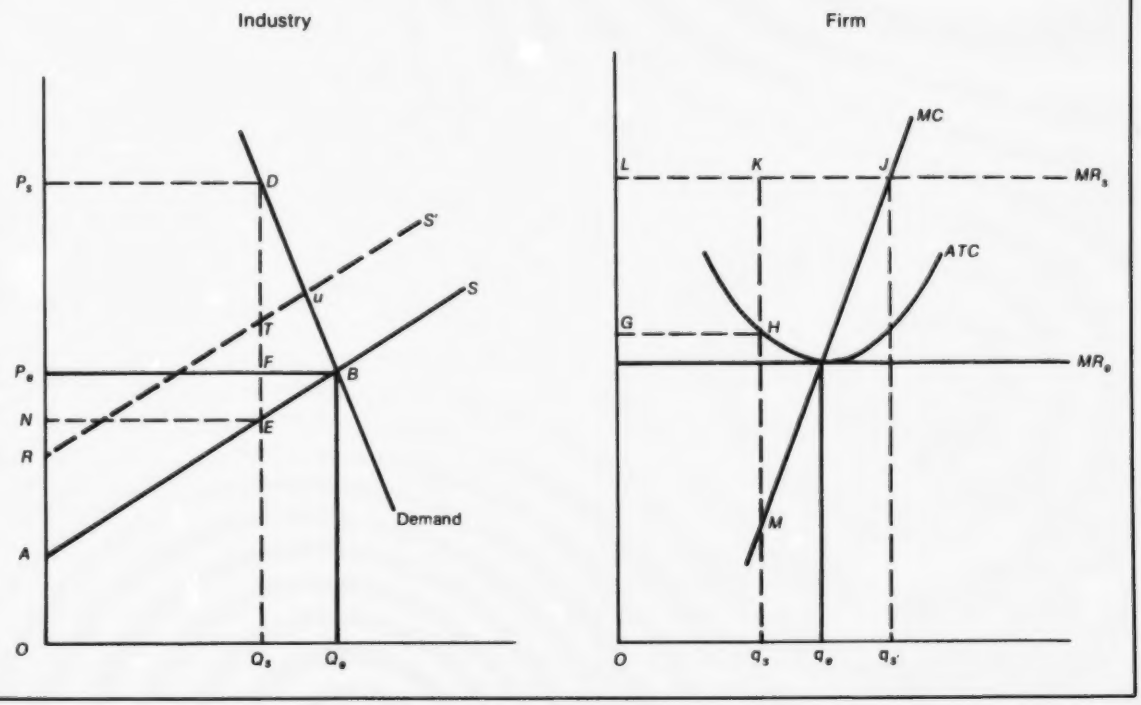
B Supply Management and Quota Values

Quota values reflect revenue-cost relationships among the existing and potential producers of the products subject to supply management programs.

"High" quota values have been widely interpreted as reflecting the present value of additional returns obtained for producers by the boards and agencies systematically holding aggregate supply below its equilibrium level ("shorting the market") and/or by cost of production pricing arrangements persistently resulting in prices being set at levels well above actual production costs. The value of quotas has therefore been used as a measure of the extra economic surplus generated for producers by the programs, of the additional expenditures imposed on consumers, and of the increase in the cost of production imposed on the second generation of producers who have to buy "rights" from their original recipients.

That is, for the regulated industry, quota values in the aggregate have been interpreted as reflecting the capitalized value of the increase in producer surplus ($P_eFDP_S - EFB$), as shown in Figure B-1, created by lowering industry output from Q_e to Q_S and raising unit price from P_e to P_S. Similarly, for an individual producer originally making normal profits at an output q_e with price P_e, the supply management program has been represented as creating rents of $GHKL$ with price P_S and output q_S per time period.

Figure B-1
The Geometry of Supply Management Programs



In practice there are some problems in equating the values of quotas with industry monopoly profits (and hence excess consumer costs).

Two factors could lead quota values to overestimate producer benefits. First, the amount that the established producing unit is willing to pay for quota is determined by the relationship between its marginal cost and revenue. Under supply management schemes that entail the underutilization of fixed facilities, the marginal cost of incremental output may be quite low and the net value of a unit of extra quota correspondingly high. In Figure B-1, the maximum amount the firm would be willing to pay for extra quota in amount $Oq_S' - Oq_S$ would be the discounted value of the area *MJK* accruing over time plus the discounted final sales value of that amount of quota. It has been argued that to the extent that intra-industry quota adjustments among firms reflect marginal as opposed to average cost-revenue relationships, the price of quota overestimates the rents generated by supply management programs.[1] The second problem stems from the fact that rent or producer surplus exists in an industry under competitive conditions. Over time, the "normal" rents are bid into the prices of resources in inelastic supply. When supply is controlled by quotas, the quotas become another asset in inelastic supply – indeed, the most inelastic – so that quotas might be expected to attract a part of existing rents. In Figure B-1, quotas would attract the area $NEFP_e$, and the *apparent* increase in producer surplus due to restricting supply ($NEDP_S - EFB$) would be correspondingly overstated by the value of quota rights.

There are however two factors that lead to quota values *underestimating* the magnitudes of market distortions produced by supply management schemes. In the first place, if the operational details of the programs result in the costs of production being raised, or prevented from falling, and hence in the industry supply function being at S' rather than S, then industry rents (at $RTDP_S$) as measured by quota values would underestimate both the loss in consumer surplus (P_eBDP_S) and the dead weight loss to society of the program ($ABUR + TUD$). The adverse incidence on production costs of levies, the nonachievement of scale and capacity economies, the political allocation of production across provinces, and entrepreneurial lethargy are features of supply management programs that would produce such an effect. Secondly, imperfections in quota markets have generally resulted in transaction prices underestimating the value of quotas to producers. For instance, for some products in some jurisdictions, quotas have not been transferable, or have been transferred at administered prices, or have been encumbered with unwanted facilities or subject to maximum holdings. To the extent that such practices have held quota values down, the latter underestimates the producer benefits, consumer burden, and welfare losses from agricultural supply control programs.

While there is no means of measuring the influence of each of these considerations, the authors are convinced that the extraordinary values that quotas have taken on, and their persistent increase, is compelling evidence that producers are using their market control powers to extract monopolistic returns from Canadian consumers (and possibly processors and distributors), and they are inclined to the view that present quota values underestimate the consumer cost and excess returns to resources that are being earned by producers of the products under supply management programs. This conviction is strengthened by the knowledge that if the supply of quota was equal to the equilibrium output (Q_e), and even if all quota transactions reflected the marginal cost and revenue relations of established firms, then, in a perfect market for quotas, the market-clearing price for quota would tend to zero.[2]

Notes

Introduction

1 Robert G. Shapiro and David R. Hughes, "Analysis of the Effects of Government Regulations on the Canadian Fruit and Vegetable Processing Industry," Economic Council of Canada, Regulation Reference Working Paper 11, Ottawa, 1980; Keith Leckie and John Morris, "Study on Government Regulation in the Red Meat Industry," Economic Council of Canada, Regulation Reference Working Paper 8, Ottawa, 1980; and Robert D. Anderson, "Government Regulation of the Canadian Dairy Processing, Distributing and Retailing Sector," Economic Council of Canada, Regulation Reference Working Paper 25, Ottawa, 1981.

Chapter 1

1 See S. Hoos, *Agricultural Marketing Boards: An International Perspective* (Cambridge, Mass.: Bollinger, 1979).

2 Illustrations of the range and diversity of the powers of boards and their interaction with public commodity policies are provided in Part II and in the more detailed analyses presented in the background reports commissioned for this study.

3 The latest in a long stream of studies that refutes this latter misconception is K. Wilde and G. Labrosse, "Profits in Food Manufacturing and Distribution," *Food Market Commentary* 2, no. 2 (June 1980).

4 For a review of this subject, see George Houston, *Food Margin Analysis: Aims, Methods and Uses*, Draft Consolidated Report (Paris: OECD, 1980).

5 The case for compensating agriculture for its production of public goods is argued by J. A. McMillan, "The Uniqueness of Agriculture: A New Challenge for Agricultural Economists," *Canadian Journal of Agricultural Economics* 27 (Proceedings), 1979, pp. 1-10.

6 For an extended discussion, see D. E. Hathaway, *Government and Agriculture: Public Policy in a Democratic Society* (New York: MacMillan, 1963).

7 J. P. O'Hagan, "National Self-Sufficiency in Food," *Food Policy* (November 1976):355-66.

8 G. L. Brinkman, *Farm Incomes in Canada*, Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy (Ottawa: Supply and Services Canada, 1981).

Chapter 2

1 Task Force on Agriculture, *Canadian Agriculture in the Seventies: Report of the Federal Task Force on Agriculture* (Ottawa: Queen's Printer, 1969).

2 This concept was particularly associated with the Food Prices Review Board; see especially its final report, "Telling It Like it Is," Ottawa, 1976.

3 Agriculture Canada, *Orientation of Canadian Agriculture: A Task Force Report*, vol. II, Ottawa, 1977, pp. 11-12 and 22-23.

4 Agriculture Canada, "An Agricultural Development Strategy for Canada," interdepartmental document prepared for the First Ministers' Conference, Ottawa, February 1978.

5 Other statements from Agriculture Canada echoing and elaborating the same themes are "A Food Strategy for Canada" (1977); the extensive documentation provided for the National Food Strategy Conference, Ottawa, 1978; and, most recently, "Challenge for Growth: An Agri-food Strategy for Canada," Ottawa, 1981.

6 J. D. Forbes, "Institutions and Influence Groups in the Canadian Food Policy Process," a study prepared for the Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy.

7 These were discussed at length in the Economic Council of Canada's Eighth Annual Review, *Design for Decision-Making: An Application to Human Resources Policies* (Ottawa: Information Canada, 1971).

8 D. M. Shute, "National and Regional Productivity of Canadian Agriculture, 1961 to 1974," *Canadian Farm Economics* 10, no. 6 (December 1975):1-6.

9 Cited in A. Mouelhi and W. T. Burns, "The Small Farm Development Program," *Canadian Farm Economics* 8, no. 4 (August 1973):1-6.

Chapter 3

1 Organisation for Economic Co-operation and Development, *Review of Agricultural Policies in OECD Member Countries* (Paris: OECD, 1980).

2 Brinkman, *Farm Incomes in Canada*.

3 The reason for including capital appreciation in current income is that farmers count their capital gains as additions to their retirement funds and are able to consume correspondingly more of their current income

than someone who must set aside income to provide for retirement.

4 These are described and discussed by Brinkman, who suggests that taxation advantages might be worth as much as 50 per cent of the value of the annual aggregate net farm income reported for taxation purposes by Canada's farmers.

5 See also R. Paul Shaw, "Canadian Farm and Non-Farm Incomes," *American Journal of Agricultural Economics* 61, no. 4 (November 1979):676-82.

6 Brinkman, *Farm Incomes in Canada*, p. 48.

CHAPTER 4

1 This perceptive observation was made by Dr. Philip Thair of the University of Saskatchewan.

2 Additionally, the favourable taxation treatment of intergenerational farm transfers within the family creates two classes of entrants – sons of farmers and others – and disposes towards growth of farm size and the development of a "landed aristocracy."

3 Some programs have set (quite high) limits on the support received by any one farmer. The Western Grain Stabilization Act and the Agricultural Stabilization Act have this feature.

4 See Organisation for Economic Co-operation and Development, *Structural Reform Measures in Agriculture* (Paris: OECD, 1972), pp. 31-47.

CHAPTER 5

1 This objective is, of course, pursued by most countries. For a review of stabilization issues, policies, and programs, see Organisation for Economic Co-operation and Development, *The Stability of Agricultural Commodity Markets* (Paris: OECD, 1980).

2 The literature is critically reviewed in D. Coleman, "Some Aspects of the Economics of Stabilization," *Journal of Agricultural Economics* 29, no. 3 (1978):243-56.

3 See, for instance, Agriculture Canada, "Challenge for Growth," pp. 56-67.

4 See K. L. Robinson, "Unstable Farm Prices: Economic Consequences and Policy Options," *American Journal of Agricultural Economics* 57, no. 5 (1975):769-77.

5 Agriculture Canada, *Orientation of Canadian Agriculture: A Task Force Report*, vol. III, Ottawa, 1977, p. 29.

CHAPTER 6

1 The degree of stability introduced into the system is easily exaggerated; see L. J. Martin and T. K. Warley, "The Role of Marketing Boards in Stabilizing Commodity Markets," *American Journal of Agricultural Economics* 60, no. 5 (December 1978):878-84; and M. M. Veeman and T. S. Veeman, "Marketing Boards in Western Canada," a paper prepared for the Canada West Foundation, Calgary, 1980 (mimeographed), pp. 36-54.

2 Peter L. Arcus, "Broilers and Eggs," Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy, Technical Report E/I 3, Ottawa, 1981.

3 T. E. Borcherding, "The British Columbia Egg Marketing Board: Monopolistic Restrictions and Social Costs," Simon Fraser University, School of Business Administration and Economics, Discussion Paper 80-03-1, Burnaby, B.C., 1980.

4 John C. McManus, "On the Efficient Design of an Agricultural Marketing Board," Carleton University, Department of Economics, Ottawa, July 1978 (mimeographed).

5 A recent study indicates a reduction in the rate of productivity of egg production between 1971 and 1975-78 between Ontario egg producers and those in San Diego, California. See R.M.A. Loyns and A. J. Begleiter, "An Examination of Production Efficiency in the Canadian Egg Industry: The Case of Ontario," University of Manitoba, Department of Agricultural Economics and Farm Management, Research Bulletin No. 81-1, Winnipeg, September 1981.

6 See, for example, Borcherding, "The British Columbia Egg Marketing Board," and McManus, "On the Efficient Design of an Agricultural Marketing Board;" see also Agricultural Economic Research Council of Canada, "The Cost of Canada's Egg System," Ottawa, January 1979; Agriculture Canada, "A Report to the National Farm Products Marketing Council on the Differentials between Farm Gate Costs and Producers Prices of Eggs," Ottawa (mimeographed), January 1979.

7 In 1976, the Consumers' Association of Canada documented serious flaws in the then new egg pricing formula. Time has borne out the validity of the Association's claim that the formula was seriously overestimating costs; see National Farm Products Marketing Council, *Proceedings of the Public Hearings: Canadian Egg Marketing Agency's Pricing Formula* (Ottawa: NFPMC, 1976), pp. 14-105 and 416-24.

8 The report by Agriculture Canada showed that the treatment of these charges by CEMA had the result that egg producers in all provinces except Manitoba received returns that exceeded the "fair" return by from 40 to 220 per cent. See "A Report to the National Farm Products Marketing Council on the Differentials between Farm Gate Costs and Producers Prices of Eggs," p. 16.

9 See Forbes, "Institutions and Influence Groups."

10 These would be only a fraction of the indirect income transfers now made through the market. For instance, Agriculture Canada has calculated that a stabilization program for chicken broilers under the Agricultural Stabilization Act would cost, at most, $7 million a year. See Agriculture Canada, "Proposals for the Establishment of a Chicken Marketing Agency," Discussion Paper, Ottawa, May 17, 1977, p. 18.

CHAPTER 7

1 It is estimated that in 1980, farm sales of milk and cream increased by almost 5 per cent over sales in 1979. Per capita butter consumption is estimated to have increased in 1980 over the levels recorded in the previous year, the first annual increase in ten years.

2 Ontario, Ministry of Agriculture and Food, "A Comparison of Ontario, New York, Vermont, and New Hampshire Dairy Farms, 1977," *Ontario Dairy Farm Accounting Project, Dairy Notes*, vol. 78, no. 14 (December 1978).

3 S. C. Thompson, "Management for Increased Productivity in Dairy Farming," *Canadian Farm Economics* 13, no. 5 (1978):1-8.

4 Thompson, "Management for Increased Productivity."

5 See W. H. Drummond, W. J. Anderson, and T. C. Kerr, "A Review of Agricultural Policy in Canada," Agricultural Economics Research Council of Canada, Publication 1, Ottawa, 1966, pp. 36-37.

6 Canadian Dairy Commision Act, S.C. 1966-67, Section 8.

7 Canadian Dairy Commission, press release, Ottawa, November 4, 1975.

8 This is approximately 9 per cent of total cheese disappearance in Canada and less than 5 per cent of total industrial milk supply.

9 Richard R. Barichello, "The Economics of Canadian Dairy Industry Regulation," Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy, Technical Paper E/I 2, Ottawa, 1981; and Tim Josling, "Intervention and Regulation in Canadian Agriculture: A Comparison of Costs and Benefits Among Sectors," Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy, Technical Report E/I 1, Ottawa, 1981.

10 Dairy producers have been quick to contest the assumptions made in the studies cited; see Ontario Milk Marketing Board, "An Assessment of the Economic Council of Canada's Report on *Reforming Regulation* with Regard to Milk and Dairy Products," Toronto, July 1981 (mimeographed).

11 Comparisons with the results of the only published official study cannot readily be made since the latter provided no estimates of the income and efficiency effects of trade restrictions on dairy products or of fluid milk regulation; see Department of Finance, "An Economic Analysis of the National Dairy Policy," Preliminary Technical Paper, Ottawa, March 1981 (mimeographed).

12 The benefit to the processing sector has been estimated at between $80 and $90 million a year. See Ontario, Ministry of Agriculture and Food, "An Analysis of the Costs and Benefits to Ontario of Participation in the National Supply Management Program for Industrial Milk," Economic Research Report, Toronto, 1979.

13 Barichello, "The Economics of Canadian Dairy Industry Regulation," Table 10.

14 See, for example, Food Prices Review Board, "Dairy Foods II: Policy," Ottawa, 1976; R. C. Douglas, "Dairy Policy," address to the National Dairy Council of Canada, Ottawa, September 26, 1978; H. G. Grubel and R. W. Schwindt, "The Real Cost of the B.C. Milk Board," The Fraser Institute, Vancouver, 1977; and Broadwith, Hughes & Associates Ltd., "The Ontario Milk Marketing Board: An Economic Analysis," *Government Regulation: Issues and Alternatives 1978* (Toronto: Ontario Economic Council, 1978).

15 Josling, "Intervention and Regulation."

16 Barichello, "The Economics of Canadian Dairy Industry Regulation," pp. 55-68.

17 For instance, in some jurisdictions, butter-margarine blends may not be sold. Consumer choice is further restricted by the regulation that margarine must be unattractively coloured and by the prohibition of the sale of cheese substitutes.

18 Food Prices Review Board, "Dairy Foods II: Policy," p. viii.

19 The Honourable Eugene Whelan, Minister of Agriculture Canada, "Production Quotas," *The Christian Farmer* 12, no. 1 (Summer 1978):1-4 (emphasis added).

20 The Honourable Eugene Whelan, Minister of Agriculture Canada, address to the Dairy Farmers of Canada Annual Meeting, Moncton, N.B., January 20, 1981.

21 British Columbia, Ministry of Agriculture and Food, "Agricultural Input Cost Survey Monthly Report: Mainland Region," Economics Branch, Victoria, January 27, 1981.

22 In 1974, the lowest income quintile group spent 2.6 per cent of total income on dairy products; this had increased to 3.0 per cent by 1978. The proportion of total income spent on dairy products for the highest income quintile group was 1.3 per cent in both 1974 and 1978. Statistics Canada, *Urban Family Food Expenditure Survey, 1974, 1976, and 1978*, cat. 62-542, 62-545, 62-548.

23 See, for example, Food Prices Review Board, "Dairy Foods II: Policy," p. 12. Ontario, Ministry of Agriculture and Food, "An Analysis of the Costs and Benefits to Ontario of Participation in the National Supply Management Program for Industrial Milk;" and Douglas, "Dairy Policy."

24 F. L. Tung and D. McClatchy, "Structural Adjustment in the Quebec Dairy Farm Sector, 1971-76," *Canadian Farm Economics* 15, no. 1 (1980):13-21; and J. R. Cumming, "Structural Adjustment in the Ontario Farm Sector, 1971-76," *Canadian Farm Economics* 15, no. 4 (August 1980):9-22.

25 This conclusion on the need for regulatory reform is very close to that arrived at by Mr. Justice Hugh F. Gibson in his criticism of the procedures and policies of the CDC, in *Report of the Commission of Inquiry into Certain Allegations Concerning Commercial Practices of the Canadian Dairy Commission* (Ottawa: Supply and Services Canada, 1981), pp. 103-04.

CHAPTER 8

1 D. M. Prescott, "The Role of Marketing Boards in the Processed Tomato and Asparagus Industries," Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy, Technical Report E/I 5, Ottawa, 1981.

2 Department of Industry, Trade and Commerce, "A Report by the Sector Task Force on the Canadian Processed Fruit and Vegetable Industry," Ottawa, 1978; and "A Report by the Sector Task Force on the Canadian Food and Beverage Industry," Ottawa, 1978.

3 The low yields per acre in Ontario are the result of importing asparagus varieties from the United States that proved unsuitable for Canada. Hopefully, this problem will be diminished if improved varieties now being developed at the University of Guelph prove successful.

4 There have been other minor public interventions on behalf of the processed vegetable industry. For instance, in recent years, both federal and provincial governments have provided programs of capital grants for upgrading, renewing or establishing storage and/or processing facilities for fruits and vegetables, and have been active in establishing employment schemes to assist producers and processors in supplementing their labour force at peak harvesting and pack seasons.

CHAPTER 9

1 Most of the information in this chapter derives from a background research paper prepared by D. R. Harvey, "Government Intervention and Regulation in the Canadian Grains Industry," Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy, Technical Report E/I 6, Ottawa, 1981. Other sources will be cited when deemed necessary.

2 Definition adapted from Harvey, "Government Intervention and Regulation," and from Alex F. McCalla and Andrew Schmitz, "Grain Marketing Systems: The Case of the United States versus Canada," *American Journal of Agricultural Economics* 61, no. 2 (May 1979):199-212.

3 This discussion is based, in the main, on Daryl F. Kraft, "Past and Potential Prairie Grain Production," a paper presented at the Outlook 1980 Conference, sponsored by the Manitoba Department of Agriculture, Winnipeg, January 22 and 23, 1980.

4 Why a similar system of intervention and regulation for dealing with these problems has not evolved south of the border is a complex issue. Strong feelings against the private grain trade and the railroads did develop there; this question has been widely studied.

5 Keith H. Tipples, "Some Common Misconceptions about Canadian Wheat," Canadian Grain Commission, Grain Research Laboratory, Winnipeg, 1981.

6 Tipples, "Some Common Misconceptions."

7 Prairie politicians have been highly inconsistent on this issue since their policies have led to centralization of services, especially schools and hospitals, into dynamic small to medium-sized service centres, knowing full well that very small towns could not support the minimum sizes needed for adequate service facilities. Those towns that serve an economic purpose grow; those that do not, decline.

8 Harvey, "Government Intervention and Regulation," p. 105.

9 Fred Anderson, "Regulation and the Characteristics of the Supply of Transport to Agriculture in Canada," a supplemantary essay in Harvey, "Government Intervention and Regulation."

10 The CWB pays a yearly "pool" price for each grade of grain it sells. The final price is known only after all the grain is sold and all selling expenses are deducted. Producers are paid for their grain when it is delivered to the elevators after each "quota" call, the number of which varies from year to year. The administrative technique used to surmount the problems of not knowing the final price until the end of the crop year is to estimate the price which will be received for the crop and to make an "initial payment" somewhat below that estimate. As the crop is sold and as world prices crystalize, an interim payment is often made and, except in 1968-69, a final payment has been made in each of the past years since 1955-56. There has been uncertainty about these interim payments, which is one of the factors contributing to price uncertainty, leading producers to be slow in delivering their quotas to the elevators.

11 W. H. Furtan and G. E. Lee, "Economic Development of the Saskatchewan Wheat Economy," *Canadian Journal of Agricultural Economics* 25, no. 3 (1977):15-28.

12 Booz-Allen and Hamilton, "Grain Transportation and Handling in Western Canada," report for the Grains Group, Department of Industry, Trade and Commerce, Ottawa, July 1979.

13 Harvey, "Government Intervention and Regulation." Another analysis of the effects of statutory grain freight rates on land prices in the Prairies found that they were of the same magnitude; see Valerie J. Fields and Daryl F. Kraft, "The Influence of Grain Freight Rates on the Farm Land Market in the Prairie Provinces," *Logistics and Transportation Review* 17, no. 1 (March 1981):52.

14 Most of the discussion on transportation derives or is directly quoted or paraphrased from Anderson, "Regulation and the Characteristics of the Supply of Transport."

15 An interesting debate has arisen over a report that compares the GHTS in the United States with its Canadian counterpart. The report has received much comment and a critical review by the CWB. See Foodwest Resource Consultants, "U.S. Grain Handling and Transportation with Selected Comparisons to the Canadian System," a report prepared for Alberta Transportation, Edmonton, June 1979; Canadian Wheat Board, "An Analysis of the June 1979 Report by Foodwest, Entitled 'U.S. Grain Handling and Transportation with Selected Comparisons to the

Canadian System,'" October 30, 1979; "Summarized Commentary on the June 1979 Report by Foodwest, Entitled 'U.S. Grain Handling and Transportation with Selected Comparisons to the Canadian System,'" October 30, 1979; and "Wheat Board Reveals Serious Errors in Alberta Grain Study," news release, November 2, 1979.

16 W. Stinson, president of Canadian Pacific Limited, forecasts reaching main line capacity in the mid-1980s; see "Rail Transportation Crunch Feared," *Vancouver Sun*, August 17, 1981, p. D1. Ross Walker, vice-president of Canadian National, Mountain Region, believes that track rationing for westward rail movements may begin in 1984; see "Westbound Rail Traffic 'Faces Rationing,'" *Vancouver Sun*, December 8, 1981, p. D.10.

17 In 1979, a grain transport co-ordinator was appointed with powers to co-ordinate the collection and shipping of grains. While some benefit may have accrued from this administrative action, the co-ordinator had no power to make fundamental changes to the system. See Table 9-5 for an appraisal of this regulatory institution.

18 This comparison is made in Donald A. Dever, "Features of U.S. Grain Handling and Transportation System which May Hold Potential for Canada," Canada Grains Council, Winnipeg, April 1980. Other comparisons are made in Harvey, "Government Intervention and Regulation;" McCalla and Schmitz, "Grain Marketing Systems;" Foodwest Resource Consultants, "U.S. Grain Handling and Transportation with Selected Comparisons to the Canadian System;" and K. Peltier and D. F. Anderson, "Canadian Grain Marketing System," North Dakota State University, Agricultural Economics Report 130, Fargo, 1978.

19 The costs of the GHTS for collecting, processing, and selling grain, except for statutory rail rate shortfalls, are paid for by the CWB, which deducts these charges from grain receipts before calculating the final payment to producers. There is weak evidence that, despite the fact that total transport costs are not paid for by Canadian producers, U.S. transport per unit of grain is less expensive. More study is needed to find the possible reasons for these results. They may include faults in the administrative and regulatory system in Canada. But the fact that, for geographical reasons, Canada's unimodel rail link east and west cannot adjust to transport bottlenecks as can the U.S. multimodel system of ice-free ports on the east, south, and Pacific coasts, plus the availability of inland water links, is also an area for investigation.

20 Harvey, "Government Intervention and Regulation."

21 The Canada Grains Council has almost served this role and has provided excellent, insightful, and independent analysis of the functioning of various aspects of the grains industry. Its major flaw is that its membership is organizational, and it has experienced withdrawal of membership in the past when its analyses of a specific problem were perceived to be contrary to the interests of one or more of its member organizations. We hope that a secretariat composed of knowledgeable individuals can overcome this organizational problem while making use of the Council's expertise. Indeed, one would expect the Council to be a source of individuals for secretariat membership.

CHAPTER 10

1 See a research paper commissioned for this study, J. C. Gilson, "Evolution of the Hog Marketing System in Canada," Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy, Working Paper E/I 2, Ottawa, 1982.

2 In early 1981, Quebec hog producers voted in favour of a marketing board.

3 Gilson, "Evolution of the Hog Marketing System in Canada;" and A. W. Wood, "Consumer Interest in Hog Marketing Boards," Canadian Consumer Council, Ottawa, 1974.

4 R. Eyvindson, "A Proposal for Changes in the Agricultural Stabilisation Act," *Market Commentary*, Agriculture Canada, April 1979, pp. 23-37.

5 Larry Martin, "Economic Intervention and Regulation in the Beef and Pork Sectors," Economic Council of Canada Regulation Reference and The Institute for Research on Public Policy, Technical Report E/I 1, Ottawa, 1981.

6 Martin, "Economic Intervention and Regulation in the Beef and Pork Sectors."

CHAPTER 11

1 This is the major complaint about Ontario's tobacco scheme, since there is no evidence that the supply control program raises prices.

2 The multiple objectives of supply management programs and other countries' experiences with them are discussed in Organisation for Economic Co-operation and Development, *Supply Control in Agriculture* (Paris: OECD, 1973).

3 For an analysis of the effects of supply restriction on input suppliers and processors of a restricted commodity, see John C. McManus, "On the Efficient Design of an Agricultural Marketing Board," Carleton University, Department of Economics, Ottawa, July 1978 (mimeographed); and Tom F. Funk, "Effects of Marketing Boards on the Agribusiness Sector," *American Journal of Agricultural Economics* 60 (December 1978):894-98.

4 For instance, in Ontario, a province in which quota values for the supply managed products are relatively modest, the capital cost of the "rights" to sell output of a one-man production unit in early 1981 were $100,000 for milk, $250,000 for turkeys, and $500,000 for eggs and broiler chickens.

5 This subject is exhaustively treated in John Quinn and M. J. Trebilcock, "Compensation, Transition Costs and Regulatory Change," Economic Council of Canada, Regulation Reference Working Paper 18, Ottawa, 1981.

CHAPTER 12

1 British Columbia's Farm Income Assurance scheme provides arrangements of this nature for 14 commodities, but has no supply management provision as such.

2 There is a vast literature on cost of production pricing in agriculture, much of which is discussed in E. C. Pasour, "Cost of Production: A Defensible Basis for Agricultural Pricing?," *American Journal of Agricultural Economics* 62, no. 2 (May 1980):244-48. The discussion here owes much to an unpublished address given by David Harrington, then of CANFARM, at a seminar held at the University of Guelph in May 1977.

3 The ASA and the WGSA formulas are different in kind from other formulas in that they use data to determine margins, not to set price. However, many of the technical and political problems of what to include in the formula and in the level of support still exist.

4 We are conscious of the great diversity of the ways in which cost of production pricing is applied across the country and between commodities, and we therefore recognize that not all the recommendations have equal relevance in all jurisdictions or to all products.

5 The National Farm Products Marketing Council has recently taken an initial but partial step to move formula pricing arrangements in these directions. See National Farm Products Marketing Council, "Guidelines for Cost of Production Formulae," Ottawa, 1981, and "Cost of Production Studies: Procedure for Interim Updating," Ottawa, 1981 (mimeographed).

CHAPTER 13

1 See, for example, United States, Comptroller General, *Government Regulatory Activity: Justifications, Processes, Impacts and Alternatives*, Report to the Congress (Washington, D.C.: Government Printing Office, 1977).

2 In the case of National Farm Products Marketing Council, this would require legislative change to the Farm Products Marketing Agencies Act, S.C. 1970-71-72, c. 65.

3 Agriculture Canada, "Terms of Reference and Procedures of National Farm Products Marketing Council," news release, Ottawa, January 4, 1979.

4 Consumer and Corporate Affairs Canada, *Proposals for a New Competition Policy for Canada: Second Stage*, Combines Investigation Act Amendments, March 1977 (Ottawa: Supply and Services Canada, 1977).

CHAPTER 14

1 This subject is addressed in R.M.A. Loyns, "Farm to Food Prices," Economic Council of Canada, Discussion Paper 157, prepared for the Centre for the Study of Inflation and Productivity, Ottawa, 1980.

2 This feature is explored in some depth in R. E. Haack, D. R. Hughes, and R. G. Shapiro, *The Splintered Market: Barriers to Interprovincial Trade in Canadian Agriculture*, Canadian Institute for Economic Policy (Ottawa: James Lorimer, 1981).

3 There is nothing new in this proposal; it was implied in the directive given by the Honourable Eugene Whelan, Minister of Agriculture Canada, in 1979 to the National Farm Products Marketing Council on the supervision and regulation of national marketing boards. "The formulae for establishing prices must be carefully scrutinized to ensure the maintenance of a Canadian industry. If quotas acquire values, then such values would be a significant indicator of price adequacy or inadequacy." Agriculture Canada, "Terms of Reference and Procedures of National Farm Products Marketing Council," news release, January 4, 1979.

4 Josling, "Intervention and Regulation in Canadian Agriculture, p. 34.

5 For an illuminating examination of the perverse influence of public policies on the economic organization of agriculture, see United States, Department of Agriculture, *A Time to Choose: Summary Report on the Structure of Agriculture* (Washington, D.C.: USDA, 1981).

APPENDIX B

1 Canadian Federation of Agriculture, "Response of the Canadian Federation of Agriculture to the Report *Reforming Regulation* of the Economic Council of Canada as Regards Agriculture," Ottawa, June 11, 1981.

2 See S. Tangermann, "A Note on Quota Values," University of Guelph, School of Agricultural Economics and Extension Education, June 1980 (mimeographed).

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